and SANITARY CHEMICALS

ILLUSTRATION: A still room in the Ungerer plant, Totowa, N. J.

A typical example of the effectiveness, and the thorough competence, of modern synthetic aromatic chemistry.

Neroli C. N. C. can be successfully used in all instances to replace its natural counterpart, Neroli Bigaradia. In addition it has the advantages of high concentration, stable price, and uniformity that can be relied upon completely.

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Only FULD makes FULSHINE . . . and only FULSHINE gives you unequalled, unchanging quality! FULSHINE is Alkali-Proof* . . . absolutely neutral and wax-free . . . contains a chemical reserve which maintains a neutrally balanced solution *and actually prevents the freeing of any harmful alkali.* Use FULSHINE without rinsing to produce a beautiful polished effect . . . or rinse for a non-polish finish. Test FULSHINE against any other cleaner you choose and see the results for yourself.

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Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes, Furniture Polishes, Deodorant Block Holders, Soap Dispensers.

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Santomerse No. 1 is an all-purpose detergent and wetting agent able to deliver the *qualities you need* to make your products sell and sell again.

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Santomerse No. 1 is a rapid and thorough wetter.

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Santomerse No. 1 provides fast penetration.

Santomerse No. 1 has high resistance to all metallic ions.

Santomerse No. 1 has rapid, free-rinsing properties.

Santomerse No. 1 makes abundant suds, even in salt water.

Santomerse No. 1 combines cleaning action, wetting, dispersing, emulsifying, penetrating — all in one product.

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Sterox* CD
Sterox SE
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MONSANTO CHEMICALS

MONSANTO CHEMICAL COMPANY
Phosphate Division
1777-A South Second Street, St. Louis 4, Missouri

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Company .....
Street .....
City ..... Zone ..... State .....

SERVING INDUSTRY . . . WHICH SERVES MANKIND

SOAP and SANITARY CHEMICALS

Volume XXVI
Number 1
January 1950

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It takes more than **steel and steam** to speed travelers across the vast blue waters of the world. Men... with skill, knowledge and experience must plot the course and guide the helm. So, too, in the perfuming of your product—oils and chemicals will produce an odor, but it takes men... highly skilled in the fine art of perfuming, to create a scent of true and lasting beauty that will assure the successful acceptance of your product.

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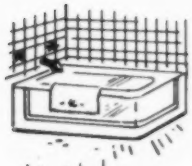
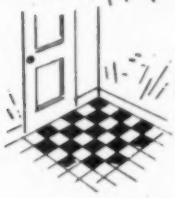
OPALIUM *rinses so freely* that polished glass, china or silver surfaces are not only free from smears, spots or dullness but also *immaculately* clean WITHOUT WIPING. Makes hard water soft and soft water wetter! Dissolves in a flash for incredible cleansing power—at low cost. NON-CORROSIVE. *The pioneer and leader — now better than ever!*



ALSO CLEANS
bathtubs, lavatories, enamelware, refrigerators and porcelain



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REMOVES SILVER TARNISH WITHOUT RUBBING
— Erases Pot and Skillet burns!

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MAKES TOUGH DISHWASHING EASY!

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A GUIDE

TO WAX PRODUCTS PURCHASING FOR PRIVATE BRAND RESALE

An honest appraisal of floor wax products as we see it is offered to guide wax buyers who want the best quality money can buy...

SELF POLISHING WAXES

Candy's Supreme–Candy's Supreme Special AS
Candy's DeLuxe–Bright Beauty

Four floor waxes that *are* all-around top quality for any given traffic condition. Each imparts the finest protection and beauty to floors for which they are best suited.

Bright Beauty FLOOR CLEANER

An outstanding material for removing even the heaviest wax film and dirt....Brings neglected floors "back to normal." The *right* cleaning agent to insure the most efficient floor maintenance.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort and imparts a deep impressive lustre. Too, it permits *repeated repolishing* with a dry cloth saving reapplications time and again; truly a very economical polish of very highest quality.

Bright Beauty PASTE WAX

A paste wax that is properly blended and refined from excellent quality solids and solvents that produce the best drying time and thorough evaporation. A wax that is easy to handle, having "creamy" consistency and stability throughout its stocking and usage period.

Bright Beauty LIQUID (spirit) PREPARED WAXES

Complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each its own "Dry-Cleaner," they keep a surface waxed with a superb protective coating necessary to many difficult surfaces such as certain floors (where adaptable), bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with neglible "powdering" and produces an undeniable "feel" of cleanness to glass that is actually true in fact. Different in color only as Silver polish, it imparts a highly desirable lustre to all silver *without* abrasion and can even correct the abuses of scratchy, "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Basic advantages are freedom from "balling up," thus does not gather dirt and impregnate the floor with hard spots difficult to remove...also is free from dusty effects. Adds the protective quality to expensive ballroom floors that means more "floor-years" to users everywhere.

Bright Beauty Heavy Duty PASTE CLEANER

Really *cleans* and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive quality, it frees almost every surface from all forms of foreign matter to perfection.

Bright Beauty SHUFFLEBOARD WAXES

Few can really demand the right product–so get on the inside early with the waxes that will *always* meet the most highly skilled performers demands for "fast play" and steady performance–the paste wax to produce a "base" of exceptional hardness and durability–a powdered wax to keep game progress on an even footing; truly tops in quality that *fully protects the expensive playing surface!*

1. BEAUTY AND DURABILITY

should be considered together. Initial appearance is important, but for a waxed surface to remain beautiful it must be durable. Durability depends not only on resistance to the abrasion of traffic, but even more so on resistance to the collection of dirt and to discoloring traffic marks. Durability is really measured by how long the waxed surface maintains a nice appearance before the necessity of complete removal and re-waxing.

2. ANTI SLIP

qualities are necessary in a good wax as a matter of safety underfoot. This important quality does not necessarily require the sacrifice of beauty and protection which are the foremost original reasons for the use of a wax. Look for the proper balance—a wax film which is not excessively slippery yet which is not tacky and does not excessively collect dirt.

3. WATER RESISTANCE

is important, particularly when considering the possibility of wet traffic and the necessity for frequent damp mopping for the purpose of removing surface dirt. Overdoing this quality means greater difficulty in applying multiple coats of wax and may seriously increase the difficulty in removal when complete cleaning and re-waxing is necessary. Water resistance is important, but so is the quality of removability.

4. SOLID CONTENT

when expressed in percentage is not nearly as important as the *quality* of the solid content. When considering good quality, 12% of solids answers most needs for good planned maintenance programs. Two applications of 12% will give better results than one of 18%. However, the more concentrated material is useful for some programs of maintenance and particularly on "washed-out" floors, etc. Over-waxing should be avoided so that periodic complete removal will not be too difficult.

5. CARNAUBA WAX

is still the most important basic ingredient in our floor waxes. When refined and compounded with other important ingredients and "KNOW HOW," it aids materially in producing the most important features of a good floor wax...ALL AROUND QUALITY OF PERFORMANCE.

● **ALL AVAILABLE FOR PRIVATE BRAND ONLY**
We do not compete with our jobbers for consumer sales.
We sell only to distributors, except for experimental accounts in Chicago essential to research.

Wax Specialists for over 55 years

Candy & Company, Inc.

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KEEP WHITE SOAP WHITE with Monsanto Ethavan and Coumarin

Monsanto Ethavan and Coumarin, when used as fixatives for perfume oils, keep white toilet soaps *white* . . . even when they're exposed for long periods. Economical Coumarin Monsanto and Ethavan amplify perfumes and make them permanent.

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COUMARIN MONSANTO
ETHAVAN
(Monsanto's ethyl vanillin)
METHYL SALICYLATE, U. S. P.
(Monsanto's synthetic oil of wintergreen)
VANILLIN MONSANTO

MONSANTO
CHEMICALS AND PLASTICS

MONSANTO CHEMICAL COMPANY
Organic Chemicals Division
1731-A South Second Street, St. Louis 4, Missouri

Please send, without cost or obligation, quotations, data and samples of Ethavan and Coumarin Monsanto.

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Company .....
Street .....
City ..... *Zone* ..... *State* .....

SERVING INDUSTRY...WHICH SERVES MANKIND

LUSTRE AND SAFETY SELL WAX!

We've always said it. We've always believed it. And we've made the wax that *proves* it!

Let's get down to cases, Mr. Jobber. *Selling* wax is as much our business as it is yours. Either we know what your wax customers want . . . or we want for wax customers.

Yes, they want a wax with good water resistance, and of unquestioned wear-ability. These two definite features must be present in any wax . . . or the kettle might as well never have started boiling. They help make a good-performing wax . . . but they're not the major factors in *selling* it.

LISTED UNDER REEXAMINATION SERVICE UL UNDERWRITERS LABORATORIES, INC. OF

POSITIVE SAFETY PROOF

LAB Wax is listed by Underwriters' Laboratories, Inc. as an anti-slip floor treatment material.

But lustre and safety . . . there's where your *competitive* selling starts ...and there's where LAB Wax shines!

The moment you spread LAB on a prospect's floor, you're order-bound. For LAB produces a positively superior sheen . . . a lustre that sells itself on sight! And LAB's lustre is *consistent*. It does not run, streak, splotch . . . thanks to LAB's self-leveling property, that minimizes the results of the most inexpert use.

As for safety . . . a glance to the left gives you the answer.

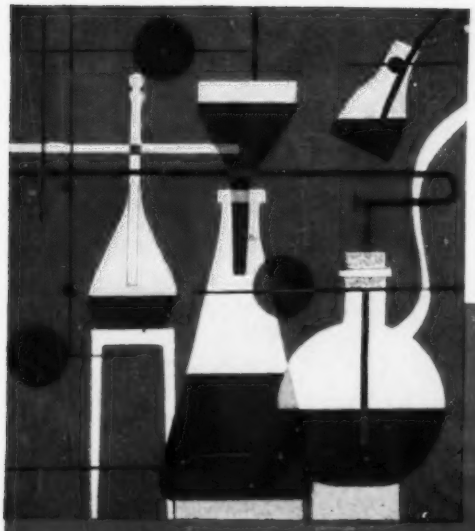
Sell lustre and safety. Sell LAB Wax . . . under your own label, competitively priced for generous profit.

SELF-POLISHING Lab WAX

Chemical Service of Baltimore

HOWARD AND WEST STREETS, BALTIMORE 30, MARYLAND

Manufacturers of quality waxes, soaps, cleaners, disinfectants, chemical specialties



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STABLE — Free from odors caused by impurities, Verona chemicals carry through the life of *your* products without undesirable change in character.

ODOR NOTES in Verona aromatics—by prolonging the *scent* life of your products—work to your advantage at the point of sale. They please the prospective customer and add sales appeal to the soap, cream, powder, perfume or toilet water that contains them.

CYCLAMAL
ROSANOL
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REMEMBER... The Scent Sells The Product

Tomorrow's Success!

VERONA

AROMATICS DIVISION

VERONA CHEMICAL COMPANY

26 VERONA AVENUE, NEWARK 4, NEW JERSEY

. . . USE Emery Oleic Acids . . .

a NEW High in Quality at Less than Pre-War Prices!

Lowest Unsaponifiable Content *(All Grades)*

Current production of all Emery oleic acids are higher in saponifiable content (lower unsaponifiable) than ever before, more reactive material per pound or per dollar.

Highest Color Stability

The unique stability of all Emersol Elaines is reflected in a similar stability in most products made from them. This will be noted in less darkening of original color under conditions of reacting or compounding, less tendency for finished product to oxidize or become rancid.

High Oxidation Resistance *(Mackey Test)*

All Emery Oleic Acids resist oxidation as indicated by their performance in the Mackey test. While Emersol 233 LL Elaine excels, regular grades are substantially better than competitive products.

Highest Oleic Content *(No Rosin Acids)*

Emersol 233 LL Elaine, the latest addition to Emery's oleic acids has been manufactured for those uses requiring minimum amounts of polyunsaturated fatty acids. Emersol 233 contains in excess of 90% monounsaturated fatty acids.

High Quality, Uniformity, Low Cost *(Emersol Elaines)*

	Titre	*Color Lovibond*	*Unsaponifiable*
Emersol 210 Elaine.....	8-11°C	30/8.0-1"	2.5%* max.
Emersol 211 Elaine.....	3-5°C	30/8.0-1"	2.5%* max.
Emersol 220 Elaine.....	8-11°C	15/1.5-5¼"	1.5%* max.
Emersol 221 Elaine.....	3-5°C	15/1.5-5¼"	1.5%* max.
Emersol 233 LL Elaine.....	6-9°C	5.0/0.5-5¼"	1.5% max.

**Former Unsap specifications for 210, 211—3.0%; for 220, 221—2.0% (233 is a new product)*

At the new low prices oleic acid becomes an indispensable raw material. Products made from or containing oleic acid which have always been superior in performance, are now replacing the less efficient and consequently, more expensive substitute.

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BUILD BETTER DETERGENTS SPECIFY...

Stable, free flowing and free rinsing, Blockson STPP materially enhances quantity, texture and stability of suds. It softens hard water, saves soap, makes clothes whiter and cleaner.

FORMULA: $Na_5P_3O_{10}$
STRENGTH: P_2O_5 57% pH of 1% solution 9.7
SOLUBILITY: 75° F 45 parts in 100 parts water

BLOCKSON SODIUM TRIPOLYPHOSPHATE

THE WIDESPREAD use of Blockson STPP in formulating soaps, synthetic detergents, cleaning compounds, and sudsing agents is due to its inherent detergent boosting capacity, its compatibility with varied mixtures, and its highly effective combination of dispersing, sequestering, water softening, and peptizing properties. As an all-round laundry sudsing builder for silks, woolens and cottons it has few peers. Synthetic detergents formulated with Blockson STPP function with outstanding success as heavy duty cleaning compounds.

WATER SOFTENING

Blockson STPP saves soap by softening hard water so that the soap can not react with the calcium and magnesium.

THRESHOLD TREATMENT

Threshold additions of a few parts per million inhibit precipitation of the calcium and magnesium hardness elements.

DISPERSION

Its dispersing properties help in forming a stable suspension of the dirt in laundering operations . . . thus preventing its redeposition on the washed articles, even during the rinsing operation.

SEQUESTRATION

The sequestered calcium and magnesium is held in a soluble combination—not affected by addition of substances that normally precipitate these hardness elements.

STABILITY

Blockson STPP is stable through a wide range of temperatures—even in hot alkaline solutions under normal conditions of use. It retains its sequestration properties indefinitely at room temperatures.

HYGROSCOPICITY

Its low hygroscopicity keeps Blockson STPP free flowing under normal conditions of use. It can be conveniently stored or handled and accurately measured in its dry state.

OTHER USES*

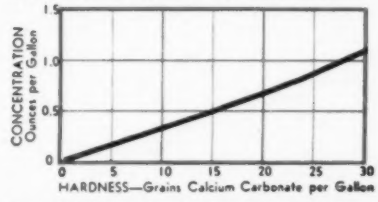
Dishwashing compounds.
Cleaning compounds for dairies, metals and textile processing.
Viscosity reducer for muds in oil well drilling.
Dye penetrant for uniform textile dyeing operations.
Purifier and disperser of clays for coating paper.

*The ability of aqueous STPP solutions to deflocculate, suspend and otherwise modify water insoluble materials . . . may suggest experimental application to your own particular problem. Send for sample.

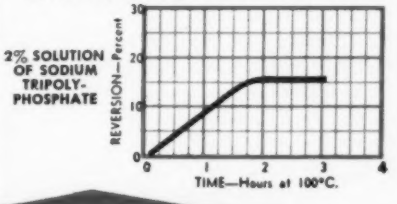
OTHER BLOCKSON CHEMICALS

- Tetrasodium Pyrophosphate Anhydrous
- Sodium Polyphos
- Sodium Hexametaphosphate
- Sodium Tetraphosphate
- Sodium Silicofluoride
- Trisodium Phosphate, Crystalline
- Chlorinated Trisodium Phosphate
- Trisodium Phosphate, Monohydrate
- Disodium Phosphate, Anhydrous
- Disodium Phosphate, Crystalline
- Monosodium Phosphate, Anhydrous
- Monosodium Phosphate, Monohydrate
- Sodium Acid Pyrophosphate
- Light Alumina Hydrate
- Gloss White
- Sulfuric Acid

Sequestration and Water Softening Capacity
BLOCKSON SODIUM TRIPOLYPHOSPHATE

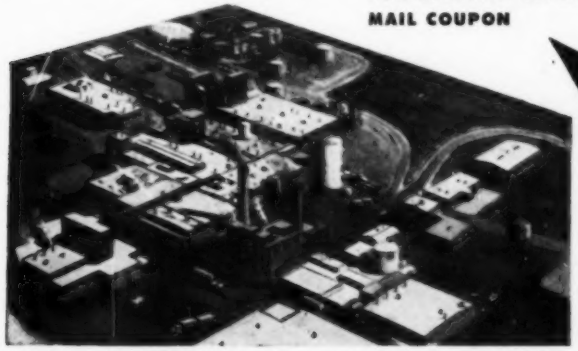


REVERSION OF SODIUM TRIPOLYPHOSPHATE TO ORTHOPHOSPHATE



FOR BULLETIN OR SAMPLE, MAIL COUPON

BLOCKSON CHEMICALS



Aerial view of BLOCKSON'S vast 200 acre site where the entire BLOCKSON organization is coordinated into a closely knit group under intimate executive supervision for prompt service to American industry, large and small.

BLOCKSON CHEMICAL CO., Dept. SC-1, Joliet, Illinois

☐ Send Bulletin on Blockson Tripolyphosphate
☐ Send sample without obligation

Name.....Title.....
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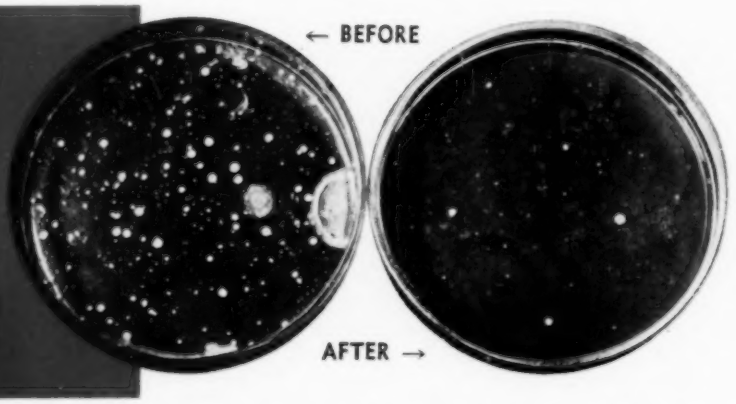
NOW... an antiseptic liquid soap "DYSEPT" *containing hexachlorophene*

"DYSEPT" with 5% *hexachlorophene* to the anhydrous soap content is the long-awaited answer to a convenient and effective means of reducing bacteria count on the skin. Ordinary soap removes dirt, water-insoluble liquids and some transient bacteria. Many bacteria are resistant to the action of ordinary soaps. *Hexachlorophene*, in liquid soap, in quantities of 1% to the total volume, has been laboratory-proved to be both bactericidal and bacteriostatic with daily use, making it ideal for use by industrial plants, food and beverage handlers, hospitals, surgeons, physicians and clinics.

Laboratory Tests Reveal Facts about "DYSEPT" with *Hexachlorophene*

Number of resident bacteria on skin before and after using "DYSEPT" regularly for four days.



1. "DYSEPT" containing 5% *hexachlorophene* to the anhydrous soap content leaves an invisible film not removed by rinsing which, with application one to three times daily for at least five days a week, reduces bacterial skin flora to about 5% of the usual number and maintains that level.

2. "DYSEPT" with *hexachlorophene* permits the reduction of surgical scrub-up contact time with daily use.

3. "DYSEPT" with *hexachlorophene* has been found to be non-irritating and non-toxic.

4. "DYSEPT" with *hexachlorophene* may be advantageously used in occupations where low bacterial flora of the skin is desirable. This includes many industrial occupations, food handlers, etc.

5. *Hexachlorophene* in a *liquid* soap produces superior results over those obtained when used in bar soap.

6. Reduces bacterial skin flora even when diluted with water.

Available through all Davies-Young Distributors

"DYSEPT" with *hexachlorophene*—A product of The Davies-Young Soap Co., Dayton, Ohio

Mail the coupon for sample

and for illustrated clinical brochure containing scientific data on "DYSEPT" and its uses.

THE DAVIES-YOUNG SOAP CO., BOX 995, DAYTON 1, OHIO SSC—150

Please send free sample of DYSEPT and clinical brochure giving complete information.

Name .....

Address .....

City ..... State .....

WHY SETTLE FOR LESS?

Nacconol NR*

THE BALANCED DETERGENT

COMBINES

Fast penetration
Thorough wetting
Excellent detergency
Good emulsification
Superior dispersion of mineral salts
High stability to acids, alkalis, oxidizing and reducing agents
Rapid rinsability
High efficiency at low concentrations
Economy in hot or cold solutions over a wide pH range

NO OTHER SOAP OR DETERGENT DOES SO MUCH FOR SO LITTLE!

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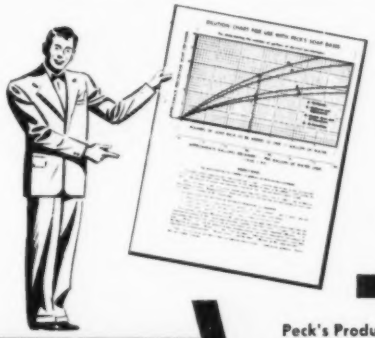

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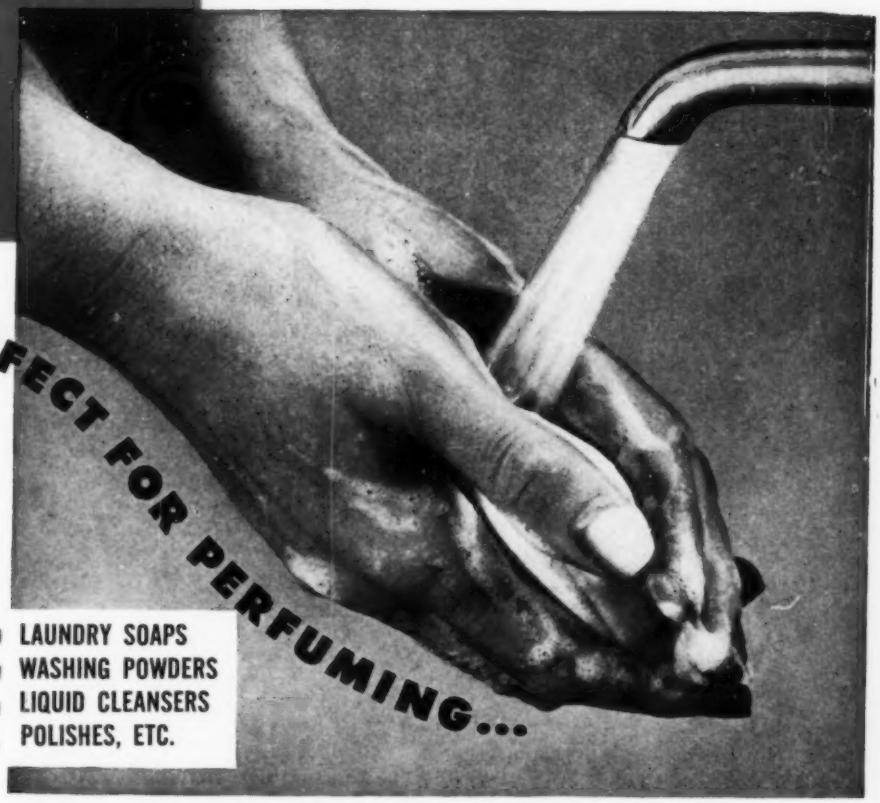

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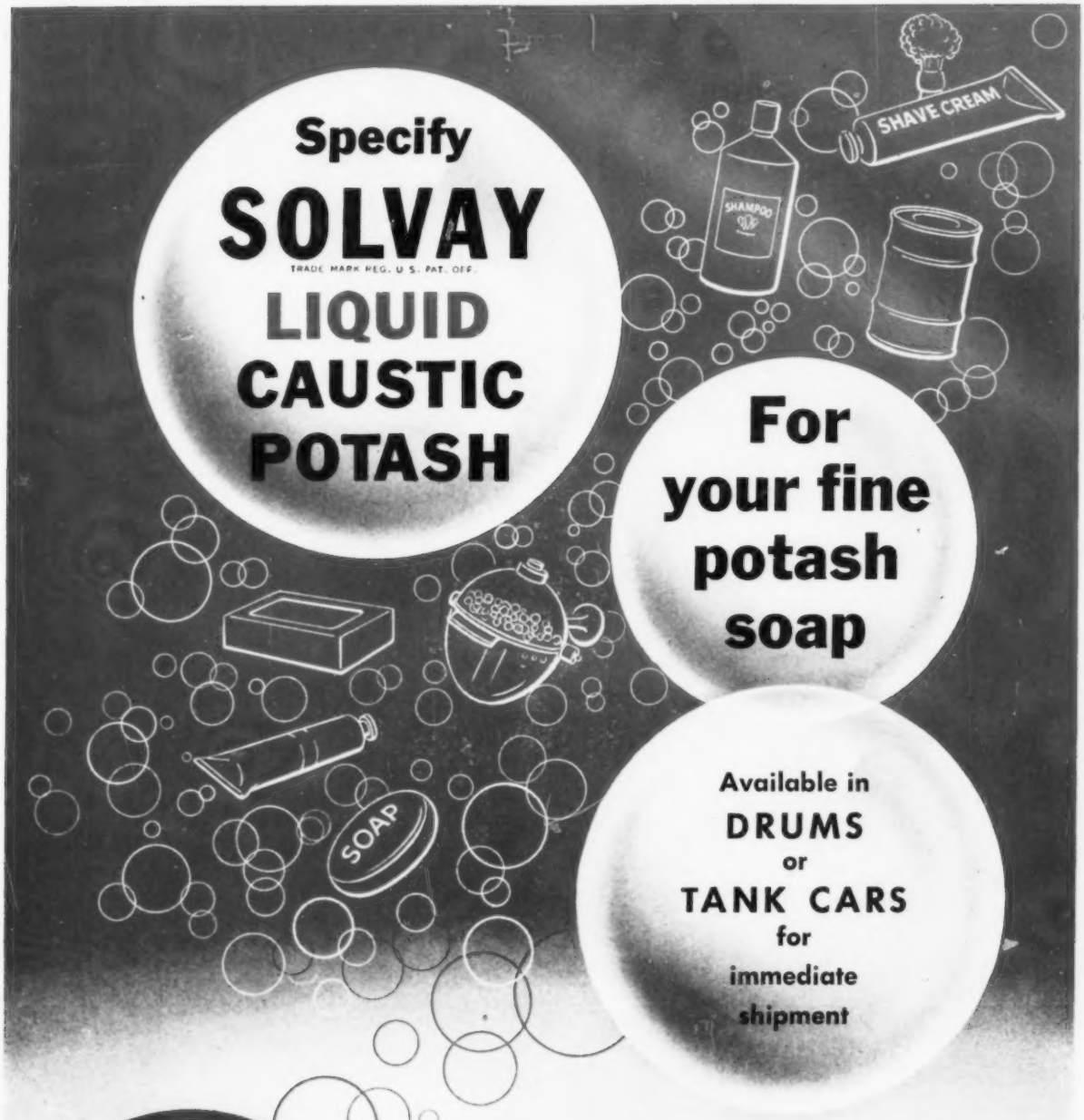

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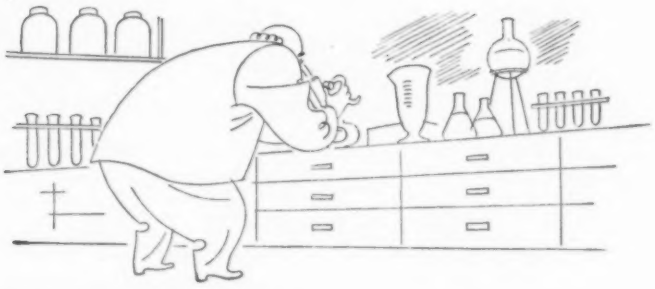

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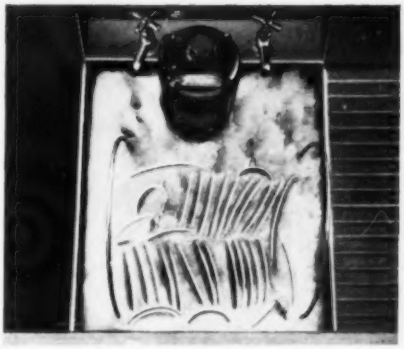
If you need detergents for compounding ...processing...or manufacturing...call the Oronite office nearest you.



A typical example of improved washing methods is the use of D-40 to loosen grease and food particles from dishes and silverware in dish-washing operations.

The high surface activity and grease emulsifying properties of D-40 quickly remove protein and other foods from soiled surfaces. This outstanding detergent works well with many sterilizing agents and helps eliminate the breeding grounds of harmful bacteria.

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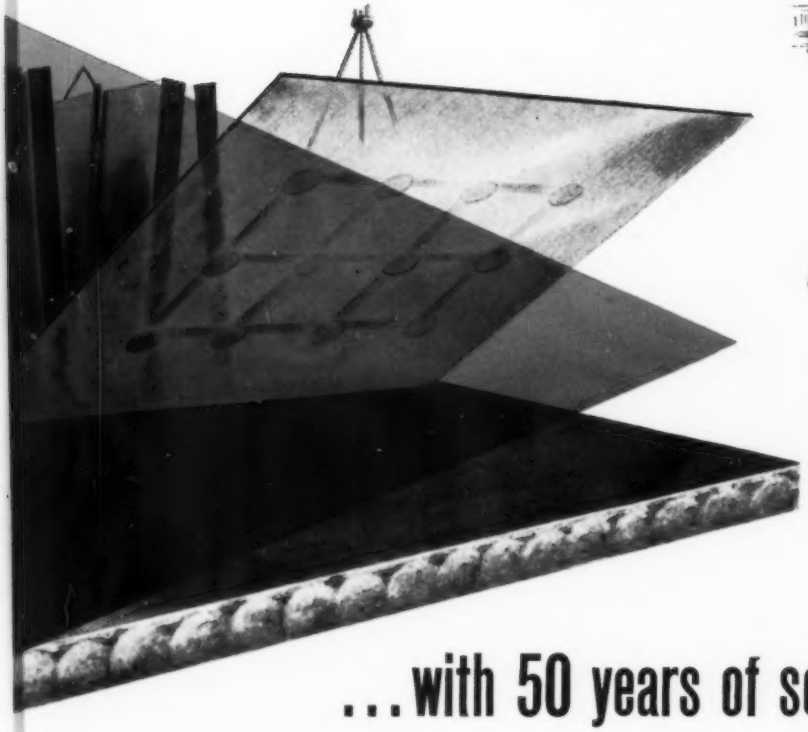
Glass-making involved many arduous, cumbersome and even dangerous processes, as did such industries as soap, paper and textile manufacture, water purification and sewage treatment.



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Many new methods and improved materials take the guesswork —and the hazards —out of modern glass-making.

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One of the world's oldest industries is very young in ideas. That's why glass-making has made such strides toward efficiency of operation, quality of products and safety of its workers in the last 50 years.

Fifty years spell progress at Niagara Alkali, too. A pioneer in American production of liquid chlorine and caustic soda, and now observing its fiftieth anniversary, Niagara has shown consistent progress by the development of new and better chemicals which, in turn, stimulate progress in the fields it serves: paper, soap, glass, textiles, sewage treatment, water purification and others.

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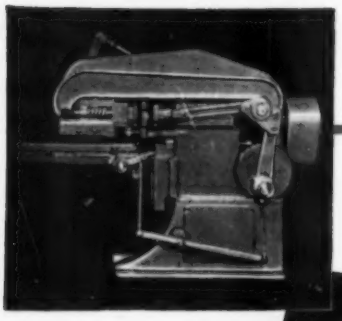


Type K Simplex Press

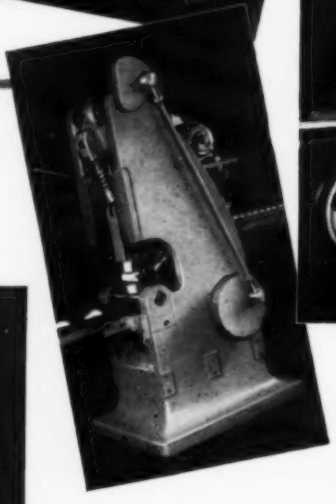
For toilet or laundry soap cakes of any shape (except highly convex cakes) with side band. Speeds of 120-140 cakes per minute.

Type K Duplex Press

Applications same as Type K Simplex. Presses two cakes simultaneously. Speeds up to 250 cakes per minute.

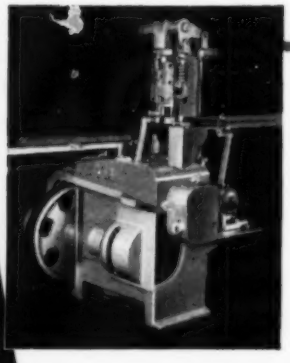
Jones Presses, with their exclusive, patented toggle motion, have become the standard throughout the world wherever high production, high quality, and perfection of finish are paramount considerations.

Standard Jones Presses illustrated here meet all soap pressing requirements. A Jones Toggle Operated Soap Press will improve the appearance of your product, increase your production, reduce your costs. Write today for complete information.



Type R Pin Die Press

For toilet soap cakes of unusual shape, oval cakes, or cakes having highly convex faces, with or without side band. Speeds up to 100 cakes per minute.



Type ET Press

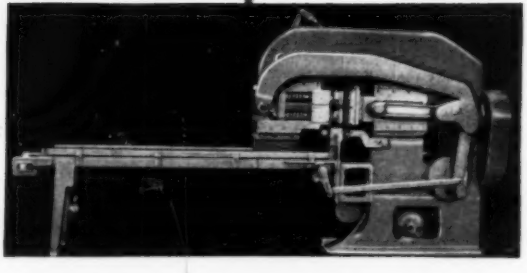
For small toilet soap cakes with side band. Speeds up to 120 cakes per minute.

Type F Press

For large toilet or laundry soap cakes. Available in Simplex or Duplex Models, pressing one or two cakes per stroke.

Type E Press

For small toilet soap cakes (1½ oz. or less). Speeds up to 200 cakes per minute.



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MANUFACTURERS OF JONES TOGGLE OPERATED SOAP PRESSES AND JONES CONSTANT MOTION CARTONERS

AS THE EDITOR SEES IT

AS 1950 makes its debut, the trend of soap and detergent prices is down. This is perhaps more pronounced among the nationally advertised brands than among the lesser known products. The past six months have seen what has been dubbed the keenest competition in soap selling since pre-war days. In the case of private brand soaps, prices may be just about at bottom levels, adjustment to the raw material markets having been more rapid. The same may be true for prices of the "big" advertised brands unless reduced sales bring competitive bitterness which well could overweigh the normal ratio of soap prices to material costs. If there are any advantages to soapers in six-cent tallow, they could easily be lost if competition exceeds the bounds of sound experience.

For the past year, demand generally has tended toward cheaper soap products. More expensive soaps, especially toilet soaps, have taken it on the chin. Synthetic detergent sales, however, have continued to expand in spite of their relatively higher prices. Overall soap and detergent inventories, it is believed, have been considerably reduced in distribution channels and some products, heretofore in flat demand, have begun to show a spark of life. This inventory situation is at least one good sign in a market where post-war adjustments continue and competition shows little indication of becoming less keen through the months of 1950.

HEAVY coupo ng by large soapers on a country-wide basis recently seemed to emphasize the fact that sales had been on a downgrade for some time. To the housewife receiving a colorful envelope carrying the word, "free," in large letters and containing several coupons worth from five to fifteen cents on a soap or detergent purchase, the reaction could range from downright cynicism to cautious optimism. Her vague understanding of the whole deal is probably summed up in the magic word, "advertising." But to soapers, far and wide, couponing is price cutting and nothing else. To small local soap manufacturers, it is strictly a pain in the neck for obvious reasons. And to the retailer, it is a nuisance which he tolerates mostly because he has to.

That some of the larger units of the soap industry have been launching almost simultaneous coupon offensives indicates that the competitive battle is going full blast. What may be the long-range advantages,—or perhaps it might be more apt to say disadvantages,—is very much a matter of conjecture. Frankly, we don't think that the soapers themselves know the answer, nor the sampling geniuses who dream up these ideas for giving away standard merchandise of national reputation under the guise of a sales stimulant. We have felt for a long time that much couponing of well-established products is done to offset the effects of the other fellow's activities, a sort of "we'll show that SOB where he gets off,"—a shortsighted policy at best. As an introductory procedure, couponing undoubtedly has its place, albeit an expensive one, but as a competitive counter-offensive, we never could see its value in relation to its cost.

EXEMPTION of soaps and detergents from sales tax in the State of Maryland is now under consideration. A move to change the law to relieve consumers from paying and retailers from collecting this cumbersome levy is expected when the Maryland legislature meets in February. Florida recently passed a state sales tax law, which exempts soap and foods. If this sort of thing keeps up, it could become a trend, and a healthy one at that.

The reason given for Maryland's consideration

of easing this sales tax is that the present law is producing more revenue ($28 million) than is needed. Such a revelation is startling. We suspect that another reason for this change of heart in the tax matter is that it affects too many people, which when spelled out means "voters". Taxes are wonderful when they hit the wealthy, always a minority group. But when taxes have been so broadly and heavily distributed as in recent years, they are being borne by a segment of the population large enough to swing an election, a thought politicians no doubt are beginning to ponder. But, be that as it may, another precedent against sales taxes on soaps and cleansers has been set.

ECONOMISTS and professional crystal gazers, who always seem to come into the spotlight around this time of year, are currently predicting good business for 1950. Secretary of Commerce Charles Sawyer, completing a personal fact finding tour across the country, in the course of which he took the industrial pulse, confirms the general feeling of optimism by predicting that business "probably will continue at its present high levels throughout at least the early part of 1950."

Among the by-products of this journey was the discovery, to which we could have tipped him off without the necessity of making the trip, that "many small business men, although still operating at a fairly high level, are suffering a substantially reduced profit margin. These reduced earnings make continued expansion of plant and equipment somewhat less attractive."

Business men almost universally voiced a plea for tax relief. The wartime excise taxes, including the twenty per cent tax on cosmetics and toilet preparations, are under heavy attack from all directions, and there seems to be a very strong prospect that they are in line for early repeal. Secretary Sawyer also recommended other changes in our basic tax laws to ease the tax burden on small business and stimulate the supply of venture capital. He reported many requests, particularly from small business men, for a liberalization of depreciation allowances and a slackening of the corporate income tax burden so as to permit small business men to retain a larger share of their earnings, without excessive penalty, as working capital.

This sort of talk of course sounds good to business men, who might feel that Secretary Sawyer's appraisal of what is needed to keep our economy rolling at a good clip is completely accurate. They can be pardoned, however, for not taking the solemn statements of the Secretary too seriously. They know it takes fuel to run a gravy train, and naturally have a sinking feeling that someone will have to keep shoveling on the coal.

EUROPE and the ECA could really play hob with the fats and oils situation, to say nothing of prices, in 1950. U. S. production, imports and stocks are up, demand and exports are off and may go lower. If any substantial part of that 2,100,000,000 pound figure for exports in the year ended Oct., 1949, is not shipped to ECA nations in 1950, the price outlook will be less healthy than at any time since before the war. About three-quarters of Europe's fat and oil requirements are ECA-financed. Should those countries receiving ECA help decide they would rather have machinery, say, than as much fats and oils as last year,—and there are indications that Europe may do just that,—then watch out for the deluge. Remember four or five years ago when the predictions were being made that world fat and oil production would not reach pre-war levels until 1950? Well, this is it, for better or for worse.

AND while mentioning ECA allocations, we note that another million dollars worth of glycerine is about to be purchased with ECA funds for shipment to Germany. Looking back over previous purchases in 1948 and 1949, for oils and fats as well as glycerine, we gather the impression that a firm in Zurich, Switzerland, has seemed to have something of an inside track in securing these orders. Out of some 40,000 tons, almost half went to this one firm while thirty American companies split the balance of the business. In one instance, a thousand tons of Russian glycerine bought with ECA funds was shipped to the U. S. and then back to Germany by this operator. Now, with another million of our easy-come tax money being spent by ECA, what happens this time?

Israel's Soap Industry

Wide World Photo

The Shemen Oil and Soap factory near Haifa, in Palestine, which supplies most of the soap used by Jewish residents in Palestine.

By Ernest Stock

THE manufacture of olive oil and soap is one of the oldest crafts practiced in Palestine, and the first Jewish industrial enterprise in this country was also concerned with olive oil production. In 1904 a group of young engineers went to Israel from Russia with the idea of applying modern techniques to an ancient craft. They set up a small oil factory in Haifa Bay, which they called "Atid" (Hebrew for Future). The name was fitting enough. The oil and soap industry is today one of the mainstays of the economy of the new state of Israel, and the successor to the humble Atid factory is the biggest single manufacturing enterprise in the country, doing a $10,000,000 business a year.

Atid was the first plant to utilize oil residues by solvent extraction. Its oil mill was later supplemented by a refinery where the first branded edible oils in Palestine were manufactured.

In 1924 the plant was bought by a group of industrialists with both plans and money to expand it into the biggest enterprise of its kind in the Middle East. They called the new company "Shemen" (Hebrew for Oil). One of the first things they did was to start producing oil and soap for local consumption from imported seeds and to export all their olive oil products to the world's markets. They also began producing brands of soap other than olive oil soap, for which they found a ready market when European Jews arrived in Palestine in great numbers. "Shemen" today produces over 50 per cent of Israel's oil and soap consumption, and its line has expanded to include half a dozen brands of toilet soap, cosmetics, tooth paste, soap flakes, shampoos, etc. The firm also makes the only locally produced synthetic detergent. The second leading soap producer in Israel is "Izhar," located near Tel Aviv, which makes a line similar to that of "Shemen" except for the detergent. Its output amounts to about 25 per cent of the consumption. The rest is produced by a number of smaller factories. "Izhar" was founded in 1935.

The total soap production in Israel now amounts to about 640 metric tons monthly, of which 500 tons are laundry soap, 100 tons related products, mainly soap powder and soap flakes, and the rest toilet soap, including medicated soap. The maximum capacity is reported to be 1,200 tons monthly. There is a demand for this quantity, but the country's difficult foreign exchange situation forces it to restrict the import of raw materials—peanuts, sesame, copra, linseed and peanuts. In 1945, 19,500 tons (in terms of oil) of these seeds were imported, last year only 12,700 tons, even

though the soap-consuming population had increased considerably. Scarcity of raw materials, due to lack of foreign exchange, is thus the greatest problem facing the Israel soap industry today.

Both the government and the industry have high hopes for the export potential of the industry. Europe and the neighboring states—once normal trade relations are resumed—are considered as likely markets. A small quantity of high-grade olive oil products is also expected to be sold in the U. S. "Shemen" olive oil—"The World Known Brand from the Holy Land" was marketed there before the war, as was a brand of Castile olive oil soap, and sales officials say that numerous inquiries have shown that "the goodwill has not been lost." While 5 per cent of the country's oil output was exported to Europe and the Middle East before the war, 1948 saw no exports whatsoever.

In Israel, the government exercises strict control over all phases of oil and soap production—from the allocation of raw material, which is distributed among the mills according to a distribution key based on normal production, to price-fixing. The recent sliding down of world market prices for oil seeds has allowed a substantial price reduction, but prices have actually been reduced far beyond the reduction in costs. This is done with virtually every product in order to force down the cost-of-living index and avert inflation. The government so far has allocated no foreign currency to allow the producers to build up stocks of raw materials, so that they are operating from hand-to-mouth and frequently have to stop production while awaiting a new shipment.

Household soap is rationed for the consumer, the monthly ration per head being 500 grams fresh-weight. The different sections of Israel's melting-pot population vary in their soap requirements, depending on their country of origin, but the per capita consumption is high.

The indigenous olive oil soap was first replaced by "Shemen" with a 72 per cent pure Marseilles-type household soap in 1926. The brand, called "Menorah," is still leading the market today. Made from peanut and coconut oils, it is a kosher soap, free of tallow. A member of the local rabbinate supervises the production. The toilet soaps contain the classical components: tallow and coconut oil, and are not considered kosher for all purposes, since, for instance, cutlery used for dairy dishes must not come in contact with a soap containing an animal product.

The synthetic detergent made by "Shemen" enables the firm to make its allocation of raw materials go a good deal further than it would with conventional soap production. The method developed by the firm, based on vegetable oils, enables it to replace a quantity of soap which would require one ton of fat by the same quantity of detergent requiring only 500 pounds of fat. The chief chemist of the firm, E. J. Better, tells me that he gained his experience with synthetic detergents when he observed the production and marketing of textile auxiliaries while studying soap production in Germany in the 1930's. His firm, however, did not go into the marketing of synthetic detergents until it had found a way to produce such a product based on locally produced raw materials. This was accomplished in 1946, when Shemen put its "Ama" on the market. Since no machinery could be imported during the war, Mr. Better remodelled equipment which had been installed in 1942 for the regeneration of lubricating oil for the British Army. With this he carried out all his experiments and actually produced several thousand tons of synthetic detergents. Permanent machinery, part of it imported from the U. S., was just recently installed in a new four-story building. With the formula proving successful, the plant had no equipment to turn out the detergent in powder form. It was decided to put the product on the market in bottles temporarily. It so happened that this decision brought about a minor revolution of the market: when drying equipment arrived last year and a powder was marketed, the liquid remained the favorite by a wide margin.

Owing to the low cost of the method, the locally-manufactured detergent is able to compete with the imported products of comparable quality marketed by Shemen's competitors. The firm has also worked out a process of manufacturing a detergent based on petroleum sources, but actual manufacture is to be started only after provision is made in the local mineral oil refineries for the production of the suitable raw materials. A special detergent for automatic washing machines, which are just now being installed all over the country, is also in preparation.

The equipment in the soap factories is a mixture of the obsolete and the up-to-date. It is of various origins. At "Shemen," I saw three expeller-type oil crushers made in England, Germany and Palestine, respectively, standing next to each other. In acquiring modern machinery, too, the shortage of foreign exchange is a big handicap. Nevertheless, a $400,000 solvent extraction plant is now close to completion on Shemen's 17-acre grounds in the Haifa Bay industrial area, with most of the machinery received from the U. S. The firm has applied for a portion of the $100,000,000 loan granted to Israel by the Export-Import Bank; to get the application approved, it had to show that U.S.-bought equipment would rationalize production and in the end result in a saving of foreign exchange otherwise spent for raw materials.

In addition to the exchange problem, a big problem in the soap industry, as in all other branches of industry, is the extremely high cost of labor. The average eight-hour day, with contributions for social benefits, costs the employer £4.50 (about $12). This is one reason Israel's export program has been getting off to a slow start, and it is also a deterrent to large-scale investments from abroad.

The Shemen plant employs about 400 workers, plus 100 administrative and distribution personnel. There has never been a strike. The business is owned 50 per cent by the marketing subsidiary of Histadrut, the General Federation of Labor, and 50 per cent by private capital. Histadrut is unique as a labor union inas-

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Detergent Retail Sales Analyzed . . . in a Southern Market

By Florence W. Brewer

Indifference to small profit soaps and detergents is grocers' attitude in Asheville, N. C. "Tide" selling well, is favored by some retailers.

"IF it washes, it's soap—and there's no profit in it anyway," is a statement that pretty fairly represents a composite of the attitudes of retail grocers in Asheville, North Carolina, toward washing powders generally and the synthetic detergents in particular. However, there are exceptions to this feeling among the merchants, according to a recent survey of the Asheville market. The outstanding exception is "Tide", which is outselling all other detergents and really commanding the attention of retailers. Whether this and other variations tend to prove the rule or indicate a new trend this report will not attempt to decide. The writer does feel that the exceptions are more interesting than the averages.

The survey of the Asheville market covered over twenty retail grocery stores, both independent and chain-owned. A good sampling of stores catering to the Negro population was included, because it accounts for a sizable section of the consuming public in any Southern city. Since Asheville is a small city, the coverage of this study represents in the neighborhood of 20 per cent of the total number of such stores. Therefore, it is probably more conclusive than a survey of similar scope in such larger cities as New York and Chicago. Every effort was made to include all types of stores from large self-service markets to small neighborhood stores, and those serving areas of varied income levels.

Survey Background

BEFORE reviewing the results of the survey itself, several factors should be clarified. "Fab", which has been successful in other sections of the country, has not yet been introduced in the Asheville market, although several grocers say that they have received advance information about it. Asheville is a relatively high-income city in comparison with other Southern areas and has an unusually large percentage of non-native residents. Lastly, Asheville boasts an extremely soft water supply, which naturally negates the greatest selling point of the synthetic detergents, quick suds in hard water.

The survey was planned to discover the general sales standing of the synthetic detergent washing powders in the market area and the attitudes of both retailer and consumer toward these comparatively new products.

Again, as shown by the New York, Buffalo and Chicago studies con-

ducted by *Soap and Sanitary Chemicals*, the retail dealers, as a whole, think of the synthetic detergents as just other brands of soap. One would not expect them to understand the chemical difference, but one might look for the realization that there is *some* difference. This is especially true because the detergents are using such advertising slogans as, "cool water suds faster than any soap". Only one of the twenty grocers interviewed really understood that there was a difference between the soap powders on his shelves and the synthetic detergent powders. He also had a fairly accurate idea of which was which. Two others knew there was a difference, but why or what or which was quite beyond them.

Could it be that a grocer's bump of curiosity is developed in direct ratio to his percentage of profit? Of course, chain store managers could not comment on this question of profit. Among the others, several said that the profit on washing powders was about the same as on other lines of merchandise carried. However, all the others claimed much lower profits on these items and many showed a good bit of resentment. In all fairness, it must be reported that two of the store owners who complained about extremely low mark-ups on washing powders, admitted that the rapid turnover on this line might compensate somewhat for low profit per item.

In contrast to the findings in the New York market, all stores visited had neat, orderly displays of washing powders. That there was no apparent effort to separate the soap powders from those with a synthetic detergent base is another straw pointing to a lack of understanding of their different qualities. During the period of the survey quite a number of window displays incorporating the synthetic detergents were observed.

In only one point did the stores serving Negro shopping areas differ from the others. It appears that the owners and managers of such stores had less conception of the power of advertising. The majority of those men said they did not know, when asked if they could account for the increase in sales of synthetic detergents in the last few years. The only ones who offered any explanation suggested that the detergents were "a good product". In the same vein, they thought that "Tide" was the best seller among the detergents because it was "good". Undoubtedly, these men have jumped right to the root of the problem. It is interesting, though, that the dealers located in white shopping districts tended to explain everything with the magic word, "advertising". In every other angle of the interviews, the grocers in the Negro sections agreed almost entirely with the results obtained generally.

The average grocer in Asheville, according to this survey, stocks three brands of synthetic detergents and seven brands of soap flakes or powders. One large market had six brands of detergents, while on the other hand, a small neighborhood store in a low-income section carried none at all. "Nobody wants 'em," said the owner, who had carried one or two detergent brands in the past. One manager claimed, "I could fill up my whole store with soap flakes if I carried all the brands. I just try to keep the ones that sell the best."

Consumers Prefer Soaps

ASHEVILLE citizens are sticking pretty steadily to the tried and true soap powders according to the interviews. 80% of them buy soap powders for dishes and the family wash. However, the results of the survey indicate that "Tide" will bear watching, even in soft-water Asheville. 85% of the customers who buy detergents buy "Tide" and the general feeling among the store managers is that its sales are constantly increasing. Some actual quotations jotted down during the interviews are of interest.

"Tide cleans everything."

"Tide is a good product — simple and easy."

"Tide is a good product — it cleans good."

"We use Tide at home. My wife says nothing's better." In the course of several similar surveys of retail markets the writer has never heard such spontaneous and enthusiastic recommendation by store owners on behalf of *any* other detergent product.

One store owner, who said that more of his customers buy "Tide" than any other washing powder except "Rinso", told of the land-office business he had done with "Dreft" when he was the only grocer in Asheville who carried it about ten years ago. For from six to nine months of the year Asheville's population is augmented by people from Florida. "Dreft" had been tremendously successful in Florida at an early date, because of the hard water. Consequently these customers flocked to the one store carrying the familiar green box.

Of the stores covered, 80 percent had experienced a distinct increase in the sales of detergents as a whole during the last year or two. The stores which reported no increase were located in comparatively low-income neighborhoods where conservatism in sticking to known brands is probably a more important factor than elsewhere. The store managers who reported an increase in sales of synthetic detergents advanced varying explanations. Three attributed the increase to the fact that the detergents were a "good product" (see earlier paragraph on stores serving Negro clientele). Five suggested advertising as the cause and one thought it was because there are now more brands. The others just didn't know.

Aside from cooperating in special sales and coupon offers initiated by the manufacturers, none of the dealers made any special effort to promote washing powders of any kind, either individually or in a group.

Most Ask for Brands

ON an average, 90% of their customers ask for washing powders by brand name, according to the dealers' estimates. Eight of the twenty interviewed said that all of their customers specified brand. When asked what they sold to shoppers who did not specify, the grocers made a variety of answers. Several sold whatever they had most of or whatever package was handiest to get down. One, when the choice was left to him, sold nothing but "Super Suds", while another reached for either "Duz" or "Tide"

(the latter was, of course, one of the "Tide" rooters).

Approximately half of the Asheville dealers interviewed are called upon occasionally to advise their customers as to the qualities and advantages of the new brands of detergents. It seems to the writer that the dealer's reaction to such a request is significant. Here are some of their responses:

"I recommend Tide." "I tell them what I think is good." "If I have a lot of a brand, I tell them to try it." "I read them what it says on the package." "I tell them what I know about it." "I tell *them* to try it." "I tell them what is selling best." "I use every brand at least once and then recommend it if it is good."

Three cheers for the last sensible gentleman!

Most of this 50% who sometimes have to advise their customers about the values of new products, are asked to do so only infrequently. An interesting general comment was made by one store owner. He said, "When I started in this business about twenty years ago, we used to *have* to *sell*. Now all we do is hand out packages. People buy what their favorite radio programs tell them to buy."

With the exception of the small store which carried no stock of the synthetic detergents at all, and three others, all dealers found that once a customer had tried a detergent base washing powder, she was a repeat customer for that type. One or two had experienced significant repeat sales with "Tide" only, but the majority opinion was that "the proof of the powder was in the washing" and that the detergents prove themselves more satisfactory. This result is much more encouraging for the wholesalers of detergents than the survey made in the soft water areas of New York City six months ago. It must be borne in mind, however, that Asheville is a more homogeneous community and its residents have a more consistently high income level than the areas checked in the former study.

One of the three dealers who had had no success with the detergents announced loftily when asked about repeat trade, "Heck! Unless they're allergic to it they go right back to soap!"

Another difference in the Asheville and New York studies is that a considerable number of Asheville merchants use a detergent base powder in their own homes. "Tide" was especially well liked by this group.

Half of the merchants interviewed had received educational and promotional material from the manufacturer when a new detergent washing powder was launched in the area. Even though two of those who had received selling helps had "thrown them in the waste basket", one wonders where the other half were when this material was being distributed. There is no evidence in this distribution, or lack of it, of any discrimination as to color, size or neighborhood. More or less, it seems as if the educational material had been "dumped" on the most accessible stores. This situation may not be too serious from the manufacturer's point of view, for there appears to be little connection, according to the survey, between the availability of informative literature and the sales of detergent base powders.

Perhaps the grocer who thought salesmanship had disappeared from his store is right. Whatever the stimulus that is most effective, radio advertising, newspaper and magazine advertising, behind-the-counter salesmanship or word of mouth recommendation, the survey of the Asheville market indicates that the use of detergent base washing powders is gradually increasing as customers try them out and thus convince themselves.

"Heck, No, Mrs. Glump, I owe you 30 cents. . . . You turned in two coupons; today is our two-for-one sale, and besides, we're giving away free samples of 'Thud' detergent all this month."

Dr. C. T. Snell ACS Rep.

Dr. Cornelia T. Snell of Foster D. Snell, Inc., New York, officially represented the American Chemical Society Committee on International Relations at a conference on educational reconstruction, held at Hunter College, New York, Nov. 10.

Mrs. Patricia H. Kelley was recently advanced to the position of Research Group Director of Foster D. Snell, Inc., and will supervise physical measurements, product evaluation and organoleptic panel in testing of odor.

C-P-P Employee Bonuses

Two weeks' salary was paid by Colgate-Palmolive-Peet Co., Jersey City, N. J., to all employees not on a regular commission or bonus basis, who worked 12 out of the last 18 months, it was announced recently by E. H. Little, president. Employees who formally retired during 1949 also receive two weeks' salary.

AMMONIA is one of the important heavy chemicals of modern technology. It is said to have more than 2,000 industrial uses. While the manufacturers of sanitary products and chemical specialties cannot be classed among the major consumers of ammonia and its salts, they do find many diverse uses for these compounds. Moreover, the number of such uses is increasing. The latest and perhaps one of the most important additions to the list of uses is the employment of dibasic ammonium phosphate in the formulation of the so-called ammoniated dentifrices.

Although many ammonium compounds find utility in sanitation and specialty products, comparatively few are used to any great extent. Most important, of course, is ammonia which is usually employed in the form of aqueous solutions of various concentrations. Among the more useful ammonium salts are ammonium sulfate, ammonium chloride, ammonium carbonate and, more recently, dibasic ammonium phosphate. Certain ammonium soaps are used occasionally. Ammonium linoleate, for example, has been described (1) as an excellent emulsifying agent for many types of polishes.

Ammonia itself is a colorless gas with a characteristic odor. Great care must be exercised in handling this gas or its concentrated solutions because the vapors are caustic and highly irritating and can be toxic. The gas is liquefied under pressure for storage and for shipment to and use by the major industrial buyers. For consumer use, however, ammonia is generally supplied as an aqueous solution of the gas or, more correctly, as a solution of ammonium hydroxide. The strongest manufactured solution has a specific gravity of 0.880 which corresponds to a concentration of about 35 per cent of pure ammonia gas.

In the United States there is frequent reference to ammonia water and stronger ammonia water. These are the forms described in the *U. S. Pharmacopoeia*. Ammonia water U.S.P. (diluted ammonia solution, diluted ammonium hydroxide solution) consists of about 9.5 per cent of ammonia in distilled water. Stronger ammonia water U.S.P. (strong ammonia solution, stronger ammonium hydroxide solution) contains about 28 per cent of ammonia.

Household Ammonia

THOUGH used in compounding various sanitation and maintenance products, such simple ammonia solutions have been replaced in the home by the so-called household ammonias. Still very popular and commanding a substantial market, such products may consist of ammonia gas in water, plus small amounts of soap and sodium carbonate or borax. They are often cloudy or turbid and are sometimes perfumed.(2) A typical procedure for making cloudy ammonia, one known as Martindale's formula, is described (3) as follows:

Castile soap	1.3 parts
Water	60.0 parts

Dissolve the soap in the water and add:

Strong ammonia solution	27.0 parts
Lime water	0.6 part
Water, to make	100.0 parts

Another method (4) uses the following ingredients:

Oleic acid	2 fl. oz.
Stronger ammonia water	2 fl. oz.
Water	5 pts.

Mix thoroughly, set aside for several hours and shake occasionally until the oleic acid is completely saponified and the soap goes into solution. Next add slowly, with stirring:

Stronger ammonia water	3 pts.

This produces a cloudy, non-precipitating solution containing 10 per cent of ammonia.

Preparations of this sort are frequently used in cleaning glassware, windows, mirrors, ceramic tile and enamels. They are sometimes added to the water used for washing clothes to serve as water-softening and detergent aids. Baked-on grease in ovens can be removed efficiently by allowing ammonia fumes from household ammonia to soften the films, which can then be removed without scouring.

Ammonia in Powder Form

IN MANY homes and sanitation kits, one of the so-called "powdered ammonia" preparations is used instead of the liquid products. Such materials, which are used as cleaners and as detergent aids with soap, usually consist of mixtures of one or more ammonium salts (e. g. ammonium sulfate, ammonium chloride) with sodium carbonate. When dissolved in water the ammonium compound and the carbonate react chemically to liberate ammonia which goes into solution in the water. Preparations of this class should be entirely soluble in tepid water and be free of caustic alkali or inert fillers.(2)

Such cleaning materials are easy to make by simple mixing of the dry ingredients and many variations are possible. Thus, according to Crowley,(4) a powdered ammonia can be made by mixing:

Soda ash, light	4 parts
Ammonium carbonate	1 part

Combinations of ammonium salts with other adjuncts are employed in various other types of cleansing aids. For example, an ammonia washing

powder can be made by mixing equal parts of powdered hard soap and ammonium carbonate.(5) According to Belanger (6) a washing, cleaning and scouring powder, which evolves ammonia when added to water, may be made from:

Trisodium phosphate	100 parts
Soda ash	50 parts
Sodium bicarbonate	50 parts
Ammonium chloride	10 parts

If a soap-containing powder is desired, from 25 to 50 parts of good quality soap powder is added to the above formula. When used as a laundry aid such a powder reduces the need for rubbing, effects quick dirt removal and does not injure delicate fabrics or injure sensitive skin. It is also an excellent general cleaner for woodwork, floors, tiles, sinks, bath tubs, linoleum, windows, kitchen and dairy utensils and for other objects.

Ammonium solutions and ammonium salts find employment in the formulation of various types of more or less specialized cleaning materials. They are included in glass polishes and cleaners, for instance, for the purpose of removing grease and such. According to Smith (7), modern products of this sort are essentially alcoholic solutions of a synthetic detergent in which about 10 per cent of ammonia has been dissolved. Alkyl aryl sulfonates, which in 0.2 per cent concentration are compatible with solvents like isopropyl alcohol or ethyl acetate, are suitable detergents and wetting agents for such products. Not quite in line with these suggestions, but indicative of the composition of such products, is Alperin's (8) formula for a glass and window cleaner which includes the following ingredients:

	per cent
Isopropyl alcohol	90
Ethyl acetate	4
Ammonia (10%)	5
Synthetic detergent	1

After mixing, the solution is allowed to stand several days in a cool place and then filtered.

Of related interest is Smith's suggestion that so-called universal paint and wall cleaners can consist of solutions of synthetic detergents containing ammonia, such as the following:

	per cent
Sulfated fatty alcohol	10
Ammonia	20
Water	70

This recalls a patented preparation (9) for cleaning painted, enameled, varnished or similarly coated surfaces. The cleansing composition consists of a solution of a sulfated fatty alcohol to which free ammonia, such as an ammoniacal solution, has been added. A stabilizer, such as an essential oil or a hydrogenated phenol, may be included and, if desired, the product can be colored.

A Review of Its Properties in Various Types of Cleaners

By Milton A. Lesser

Ammonia Solutions for Spotting

AMMONIA solutions of various concentrations are among the standard materials used by professional spotters (10) and in home methods (11) for removing stains from fabrics. Such preparations are useful adjuncts for removing stains caused by perspiration, beer, milk, iodine and certain types of ink.(12) More specialized is the spotting solution known as ammoniated alcohol. This is made by adding one ounce of concentrated ammonia to one pint of alcohol.

Such anti-stain action, plus other desirable qualities, help to account for the rather frequent use of ammonia in more specialized products, like solvent soaps, rug cleaners, and various other cleaning and renovating compositions. For example, a solvent liquid soap may be made from: (5)

	per cent
Soap	5
Ammonia (sp. gr. 0.880)	25
Cyclohexanol	10
Water	60

Also illustrative of the use of ammonia solutions is the following rug cleaning preparation: (4)

Diglycol oleate	3 pt.
Butyl "Cellosolve"	5 fl. oz.
Ethylene dichloride	12 fl. oz.
Alcohol	1 pt.
Oleic acid	12 fl. oz.
Stronger ammonia water	12 fl. oz.
Water	3¼ pt.

Mix the first five ingredients. Add the ammonia to the water and pour this solution into the first mixture, with thorough stirring for several minutes.

Another interesting ammonia-containing preparation is provided (13) in the following formula for a paint brush cleaner in which all parts are by volume:

Kerosene	20.0 parts
Diglycol oleate	10.0 parts
Ammonia (concentrated)	2.5 parts
Alcohol	2.5 parts

Mix the kerosene and the oleate. Separately mix the ammonia and the alcohol and pour this into the first mixture with stirring until uniform. To clean brushes, place them in the mixture overnight and then wash thoroughly with warm water.

Noteworthy, too, is a British formula (14) for a paste type industrial hand cleaner:

Soft soap	80.0 parts
Ammonia solution	5.0 parts
Oil of turpentine	2.5 parts
Powdered pumice	30.0 parts

The detergent, grease-cutting, solvent, dispersing and other properties of ammonia make it a useful and fairly frequent ingredient of polishes and cleaners for metals, floors, and other

surfaces. In formulating metal polishes, ammonia solutions are used in both the general and in the more specialized types of products. Indicative of such utility is the following formula for a liquid metal polish as suggested in a Government publication (2):

	parts
Oleic acid	2.5
Orthodichlorobenzene	50.0
Pine oil	2.5
Diatomaceous earth (air floated)	10.0
Silica dust	10.0
Strong ammonia (26° Be.)	2.5
Water	22.5

Thoroughly mix the first five ingredients, add the ammonia to the water and then add this solution to the mixture with vigorous stirring.

More specialized and illustrating the use of an ammonium salt is the composition given by John (1) for making a silver polishing powder:

Precipitated chalk	5.0 parts
China clay	5.0 parts
Jewelers' rouge	1.0 part
Ammonium sulfate	0.5 part

Interesting in that it employs several ammonia compounds is the formula given below for making a chromium plate cleaner: (15)

	per cent
Mineral oil	13.0
Pine oil	3.0
Ammonium oleate	2.0
Ammonium oxalate	3.0
Tripoli	24.5
Ammonia	0.5
Water	54.0

Also employing an ammonium soap is the following jewelry cleaning fluid, which should make a welcome addition to any line of specialty products:

Ammonium linoleate	40 parts
Acetone	60 parts
Ammonia	10 parts
Lavender oil	1 part
Water	880 parts

Ammonia in varying quantities is a frequent constituent of liquid type floor polishes. One of the simplest and most frequently cited (2, 4) ammonia-utilizing floor waxes is made from:

Turpentine	2 pt.
Beeswax	½ lb.
Ammonia (10% solution)	6 oz.
Water	1 qt.

Using a water bath, dissolve the wax in the turpentine with the aid of heat. When solution occurs remove from heat and add the ammonia and water with rapid stirring until a creamy emulsion is formed.

Ammonia is often included in a rubless dry-bright floor polish because it dissolves shellac. Shellac in turn, is often incorporated in such polishes to cut down the slipperiness of a straight carnauba wax emulsion. As a matter of fact, ammonia is an important component of dispersions based on shellac, Manila loba B resin, or casein. The addition of a dispersion of this type increases the spreading and flow-out properties of the rubless floor polishes and improves the smoothness of the dried polish film. (16)

Ammonium linoleate is a useful emulsifier for making rubless, bright-drying floor polishes. As noted by Schwarcz (17), the use of this ammonium soap reduces scuffing and improves the spreading qualities of the polish. However, a floor film made with this ingredient has a tendency to be brittle and does not self-heal readily. A formula for a bright-drying wax polish, which indicates how this soap is used, has been given (5) as follows:

Carnauba wax No. 1	10.00 parts
Ammonium linoleate	3.00 parts
Borax	2.00 parts
Water	90.00 parts
Turpentine	1.00 part
Pine oil	0.25 part

Heat the wax, turpentine and oil to 100°C. in a jacketed vessel equipped with a high speed stirrer. Slowly add the solution of soap, borax and water, previously heated to the same temperature. Stir vigorously until emulsified.

As already indicated, ammonia and certain of its compounds display useful water softening properties which find use in washing and laundry preparations. This property also finds application in the formulation of bath preparations. Many such products have been described in older reference sources but, as indicated in more recent publications, there is renewed interest in these items. For example, in his review on bath preparations, Winter (18) included a bath milk made from:

White potassium soap	50 parts
Hot water	800 parts
Ammonia (concentrated)	75 parts
Perfume complex	85 parts
Alcohol	25 parts

Dissolve the soap in the water, let cool to 50°C., add the ammonia, and finally incorporate the alcohol-perfume solution. Stir.

Similarly interesting is "toilet ammonia" listed by Goodman (19) as follows:

Green soap	12.0 parts
Boiling water	50.0 parts
Stronger ammonia water	25.0 parts
Oleic acid	1.0 part

Dissolve the soap in the water, add the ammonia and oleic acid, allow to cool and then add:

Oil of bay	0.2 part
Oil of rosemary	0.2 part
Oil of verbena	0.6 part
Water, to make	100.0 parts

In passing it should be noted that thousands of tons of ammonia gas, as well as other ammonium compounds, are used for treating water supplies (20, 21). In combination with chlorine, ammonia is used by various cities and towns for water purification because under some circumstances the combination has proved more effective than chlorine alone. The chlorine-ammonia treatment not only serves to control taste and odor, but also provides prolonged disinfection of water passing through reservoirs and distribution systems, thereby maintaining the bacterial quality of the water.

Ammoniated Dentifrices

AMMONIATED dentifrices may turn out to be one of the most important advances in oral hygiene. Currently the demand for such products has greatly increased the sale of dibasic ammonium phosphate. This ammonium salt together with urea (carbamide) comprise the active ingredients of most of these newer products.

During recent years considerable progress has been made on methods for preventing or controlling dental caries (22). Among these are Gottlieb's impregnation technic and the topical application of fluorides, both of which require the services of a dentist. Among procedures suitable for

self-administration are the carbohydrate-free diet, vitamin K chewing gum, and the use of ammonium ion-bearing dentifrices.

As remarked by Kopely (23), the use of such dentifrices is a practical and easily applied means of caries prophylaxis, especially since most people use some sort of dentifrice regularly. An ammoniated dentifrice may be employed alone or in conjunction with any of the other recognized caries control methods. The dentifrice method, he notes, is not only pleasant to use and easy to apply, but it does not interfere with an individual's normal habits. Moreover, it requires a minimum of thought and effort to achieve the desired results.

Although the ammoniated dentifrices have met with great enthusiasm and these new products seem to offer considerable promise in caries control, it is recognized that much more work must be done with them before their true value can be established. Currently, the most important investigations along these lines are being carried out by two groups of workers. One is the group, headed by Kesel (24), which is associated with the University of Illinois Foundation. The other consists of Henschel (25) and those associated with him in New York.

Like other scientific discoveries, the development of ammoniated dentifrices is the result of many observations made by many workers over the years. Among these is the observation that there are certain people who rarely or never develop cavities in their teeth. In other words they are "caries-immune." It has also been observed that *Lactobacillus acidophilus*, a micro-organism present in large numbers in the mouths of persons with dental caries, is not found in these caries-immune individuals. This, together with other evidence, has led to the theory that dental caries are a disease of the calcified tissues of the teeth caused by the acids produced by the action of micro-organisms on ingested carbohydrates. While not all authorities subscribe to this view, it has been very useful in dental research.

Investigations also showed that the saliva of caries-immune persons will not support the growth of acid-forming *Lactobacillus acidophilus*. This, it was found, is due to the fact that their saliva contains higher proportions of ammonia than that of persons susceptible to dental caries.

Ammoniated dentifrices are the newest group of products in which one form of ammonia is employed. Household ammonia is still a very important cleaning product.

Continued studies showed that an artificial immunity could be produced in the mouth of caries-susceptible people by the proper use of a dentifrice containing ammonium ion-releasing compounds.

Both of the research groups mentioned above share the opinion that combinations of dibasic ammonium phosphate with urea produce a synergistic action that is more effective than either material alone. They are in disagreement, however, on the optimal concentrations of these active ingredients in the dental preparations. They differ also on the mechanism by which the action occurs.

Kesel and his colleagues (26) feel that five per cent dibasic ammonium phosphate and three per cent urea in combination have a synergistic effect in (a), inactivating the bacterial enzyme systems in saliva that produce lactic acid and (b), inhibiting the growth of lactobacilli and yeasts. In their early studies (24), there was a marked reduction in the *Lactobacillus acidophilus* (L.a.) count following the use of a tooth powder and mouth wash containing five per cent of dibasic ammonium phosphate. Later, urea was added and further studies were carried out with preparations containing both agents. A recent report (26) on clinical studies indicates that the conscientious use of a dentifrice containing these substances does produce a reduction in caries activity. They note, however, that a clinical evaluation is exceedingly difficult to make. "We do not know," say these workers, "how much credit to give the brushing and how much to give the dentifrice." They feel that a larger number of cases must be studied before conclusions can be drawn.

The dentifrice being used by the Kesel group consists of:

Dibasic ammonium phosphate	50.0 Gm.
Urea (carbamide)	30.0 Gm.
Bentonite	50.0 Gm.
Precipitated calcium carbonate	866.0 Gm.
Soluble saccharin	2.0 Gm.
Menthol	2.0 Gm.
Peppermint oil	2.0 cc.
Cinnamon oil	1.9 cc.
Methyl salicylate	6.0 cc.
Sodium lauryl sulfate ("Duponol")	10.0 Gm.

At present a dozen or more brands of tooth powder based on this formula are on the market. The manufacturers of these dentifrices work under a license granted by the University of Illinois Foundation. In a discussion (27) of this dentifrice and the mouth rinse used with it, the Council on Dental Therapeutics of the American Dental Association stated that the preparations appear to be harmless provided pure chemicals and abrasives of dentifrice grade are used in their manufacture. It should be emphasized, says the Council-authorized report, that some grades of bentonite are harshly abrasive. Of interest in this connection are investigations (28) which show that the replacement of the approximately five per cent of bentonite with one per cent of colloidal magnesium silicate (e.g. "Veegum," R. T. Vanderbilt Co., New York) yields a somewhat better product. The four per cent difference in the formula is made up with calcium carbonate.

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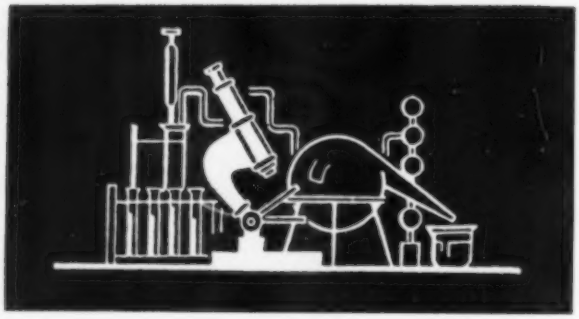


Evaluation Tests: for

By E. A. Leonard *

Alexander Smith & Sons Carpet Co.

IT IS the exception rather than the rule that industrial products can be evaluated thoroughly and reliably by established and uniform test methods. All statements to the contrary notwithstanding, science has not yet made it possible accurately to predict performance on the basis of laboratory data alone. This includes not only highly technical and recently developed products but also the thousands of items which have been in use for many years; a few of which are lubricants, drugs, automobiles, electronic tubes, and furniture. For this reason the usual pattern adopted when there is a complete lack of test methods is to start with field or service tests only. Then, as the various primary and secondary factors which affect performance become recognized, an attempt is made to develop corresponding laboratory tests for those factors and to correlate them with performance. This is always a stepwise procedure, and usually a slow one, in which laboratory tests for one factor after another are developed and successfully related to performance. The procedure requires parallel efforts of at least a few workers and their final agreement on conclusions. The basic philosophy of test development is to push the evaluation of the products in question as far as possible out of the field back into the laboratory, where testing conditions can be maintained reasonably free from extraneous variables.

Due to the extreme pressure of necessity, certain types of products have undergone to a considerable, but by no means complete, degree the development of laboratory evaluation tests. A few examples are rubber compounds, boiler feed water and heavy duty machine oils. Other products have gone only a short distance along the way toward laboratory evaluation. Shoes are one example which might be cited. It is the purpose of this paper to discuss laboratory evaluation tests of rug cleaning compounds which up to this time have been examined largely by resort to field testing. Rug cleaning compounds are designed for use under one of several conditions as indicated in Table I.

It will be noted that there are three general types of compounds as follows:

A. The wet cleaner; a water solution of a soap or synthetic surface active agent.

B. The dry cleaner; a naptha or chlorinated solvent or combination thereof with various additives.

C. The absorbent powder; a clay dampened with dry cleaning solvents.

It will be noted that absorbent powders are not used for commercial plant cleaning, nor are dry cleaning solvents used for commercial location cleaning.

The basic problem is to evaluate the performance of each of the three classes of cleaning compounds by laboratory tests. By virtue of field experience the primary and secondary factors listed in Table II were found to affect performance. With these factors are listed the properties which they are intended to indicate.

The work on which this report is based has been pointed toward the development of test methods particularly for location cleaning compounds. While many of the factors are also pertinent to plant cleaning materials, a somewhat different emphasis is required.

A test for each of the properties listed gives reasonably good data in the laboratory on the expected performance of a rug cleaning compound when properly interpreted relative to the whole battery of tests. Further explanation of the properties in Table II and the test by which they are determined is in order.

A. *Chemical Tests*

Standard and obvious analytical procedures are used for determining the properties indicated. It will be noted that pH and the type of builder are intended to indicate wool damage. In the case of floor coverings, such damage is exhibited by reduced wear-life. Since wool is a protein fiber it is subject to alkaline hydrolysis; and it has been found that alkaline treatments

TABLE I: TYPES OF CLEANING PROCESSES & COMPOUNDS

	Cleaning Compounds		
Cleaning Operations	*Wet Cleaners*	*Dry Cleaners*	*Absorbent Powder*
Commercial Plant Cleaning	X	X	X
Commercial Location Cleaning	X	X	
Home Location Cleaning	X		X

* Before Chemical Specialties Manufacturers Assn. Meeting, Washington, D. C., Dec. 5, 1949.

or Chemical Specialties

How rug cleaning compounds are tested is described as an illustration of how other chemical specialty products may be evaluated in company laboratories.

will reduce wear-life. Carpet wear-life is usually evaluated on a specialized abrasion machine which is not commonly available. For this reason, and because pH has been correlated to some extent with wear-life, the latter criterion is used as an indicator.

The total solids test is of value when one is testing a solution of unknown concentration. That coupled with the identification of detergent type can be used for comparison with a standard material whose concentration, effectiveness, and price are known.

The resoiling properties have been described in a previous paper (1). The identification of detergent type also gives a hint of resoiling properties. It will be realized that resoiling is of primary importance in location cleaning, either commercial or home cleaning, while it is of little importance in plant cleaning where the material is rinsed out.

B. Cleaning Effectiveness

Detergency is the most difficult of all cleaning factors to evaluate reliably, either in the field or the laboratory. Part of the difficulty revolves about the choice of satisfactory criteria for cleanliness. The average consumer for instance is not really interested in how clean the rug is but in how clean it looks. That is, he is interested in having the color restored as nearly as possible to its original condition. On the other hand, there are available criteria of absolute cleanliness which

Table II: List of Factors Affecting Performance of Rug Cleaning Compounds

A. *Chemical Properties*
1. Wet Cleaners
   a. pH at use concentration—to show possibility of wool damage.
   b. Qualitative analysis of builder—to show possibility of wool damage.
   c. Total solids — to show money value.
   d. Identification of detergent type—hint at effectiveness.
   e. Titer of soap—hint at resoiling properties.
2. Solvent Cleaners
   a. Flash point — to show possible fire hazard.
   b. Identification of type — to show possible toxicity or fire hazard. Non-volatiles — hint at resoiling.
3. Powder Cleaners
   a. Ratio of solvent to powder — to show possible toxicity or fire hazard.
   b. Identification of type of solvent —to show possible toxicity or fire hazard.
   c. Flash point of solvent — to show possible fire hazard.

B. *Cleaning Effectiveness*
1. Water extract—shows residual detergent and hints at resoil properties.
2. CCl_4 extract — shows effectiveness for grease removal.
3. Dirt extracted by tapping — shows effectiveness for suspended dirt removal.
4. Visual color comparison—shows apparent effectiveness.

C. *Resoil Properties*
1. Application to standard carpet followed by floor service.
2. Application of free fatty acid if detergent is soap.

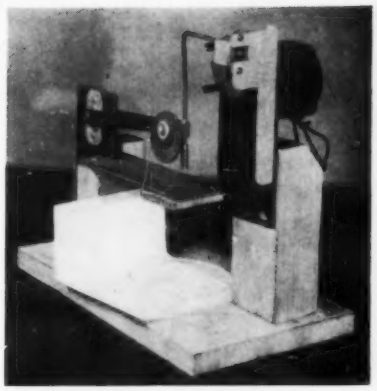
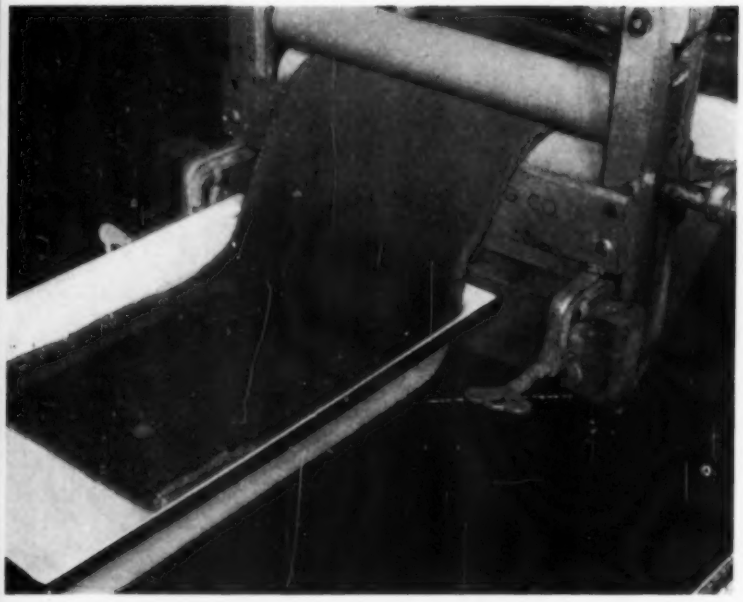


Fig. 1. Vibrator for Removal of Inert Matter from Carpet Specimen.

can be determined by testing for the amount of different types of foreign matter in the pile.

Both systems are used here in the following manner:

1. A clean carpet specimen made of bands in 18 colors is used for testing. The analysis of its pile fibers in terms of foreign matter is known before the start of the test. A piece is kept in new condition.
2. A second piece is exposed to floor service for a period of 30 days. During this time, the colors become dulled or otherwise changed and the pile of the fabric becomes contaminated with water soluble, oil soluble, and inert foreign matter. The amounts by which foreign matter increases during service are tested by soxhlet extraction of the whole carpet with water and carbon tetrachloride for the water soluble and oil soluble fractions respectively. Inert foreign matter which is removed during extraction is retained in the paper extraction thimbles and combined with the inert fraction removed by agitation in a vibrator shown in Figure 1 This vibrator subjects a small piece of the carpet to a repeated cycle of impacts which knocks out the inert particles of foreign matter.
3. A section of the soiled carpet is also retained for color. A portion of the soiled specimen is



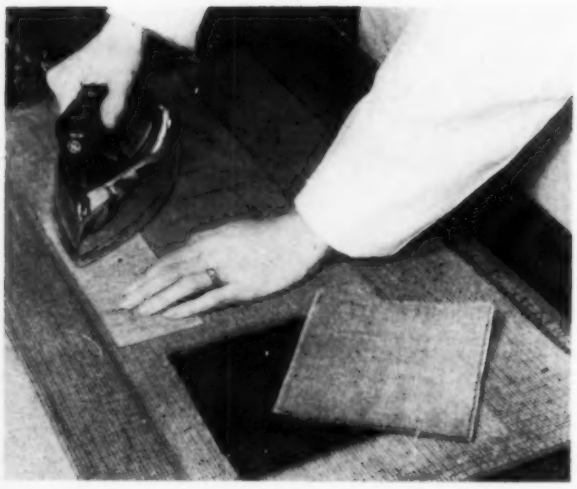


Figure 2 (left). Impregnation with cleaning solution for preparation of resoil test.

Figure 3 (above). Inserting treated swatches for preparation of resoil test.

then cleaned in accordance with the recommended procedure for the detergent in question.

4. The color of the cleaned piece is then compared with the colors of the original and soiled pieces respectively and the analytical data on foreign matter obtained.

The ideal detergent should do two things:

A. It should reverse completely the colors from their dull soiled condition to the color of the new carpet.

B. It should remove all of the foreign matter which was added during the soiling process and not put in any additional.

C. Resoiling Properties

This test is made as shown in Figures 2 and 3. It is intended to indicate for location cleaning compounds the effect of the detergent residue with regard to making the pile sticky and adhesive toward foot-born soil. A piece of light colored plain carpet in new condition as free as possible from all foreign matter is padded with a solution at use concentration of the detergent in question. The specimen is then passed through a squeeze roll to get about 100 per cent wet pick up. It is dried and a small piece 6" x 6" cut out and inserted with thermoplastic tape into a larger rug. Also inserted into the rug is a control piece of new carpet untreated and another piece treated with a standard detergent against which comparison is being made. When completely assembled such a test rug looks like that shown in Figure 4. The piece is then exposed to floor service for 10 days in the course of which the specimens treated with those detergents imparting soiling properties will show up much darker than the others. Such a set of tests is illustrated in Figure 5.

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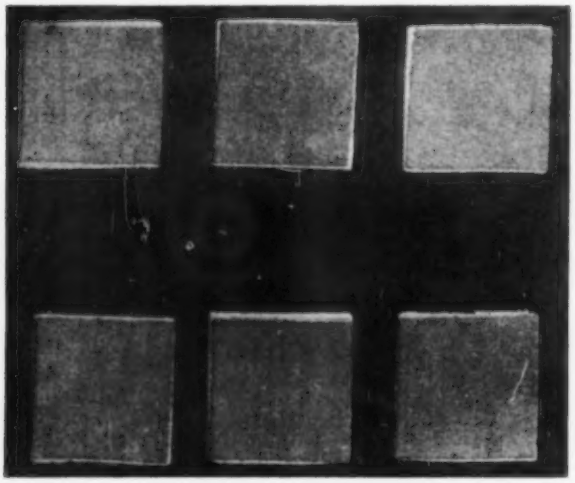
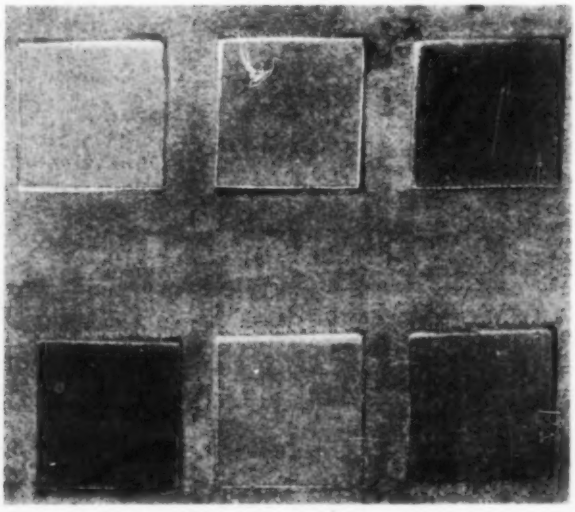
Figure 4 (below). Exposure panel for resoil test.

Figure 5 (right). Resoil test panel after floor service.





Stanley Home Products . . .

A unique success story in the field of household chemical specialties

The original plant of Stanley Home Products was a small tobacco warehouse located in the town of Easthampton, Mass.

The newly acquired Stanley plant, which is shown in the photograph above, was formerly the War Assets Terminal Warehouse in Easthampton, Mass. The building was completely modernized and re-equipped to handle the company's greatly expanded volume of chemical specialty business.

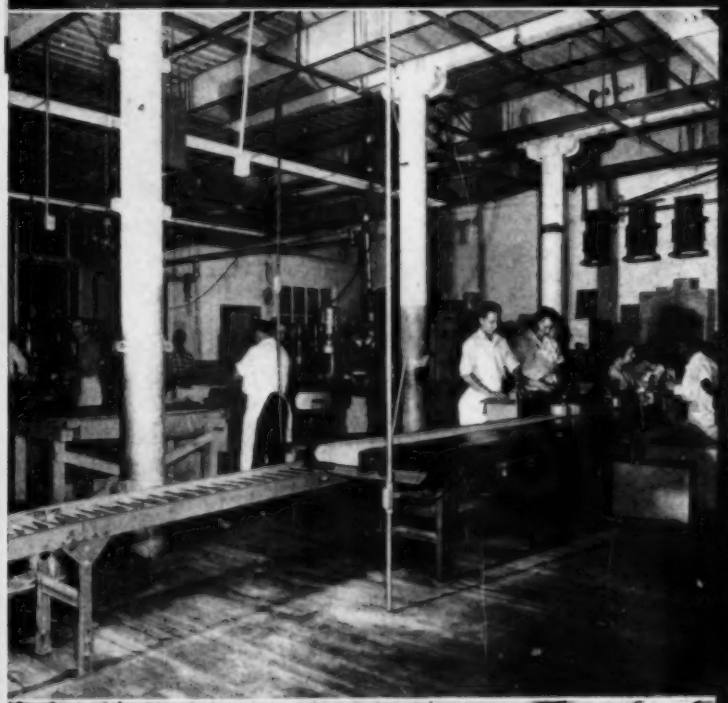
STANLEY Home Products, Inc., Easthampton, Mass., manufacturers of brushes and household chemical specialties, have made a rather phenomenal growth since the business was started less than twenty years ago in an old tobacco warehouse. Founded in August, 1931 by F. Stanley Beveridge, the company has expanded rapidly, not only in its physical plant but also in number of employees, range of products and volume of business.

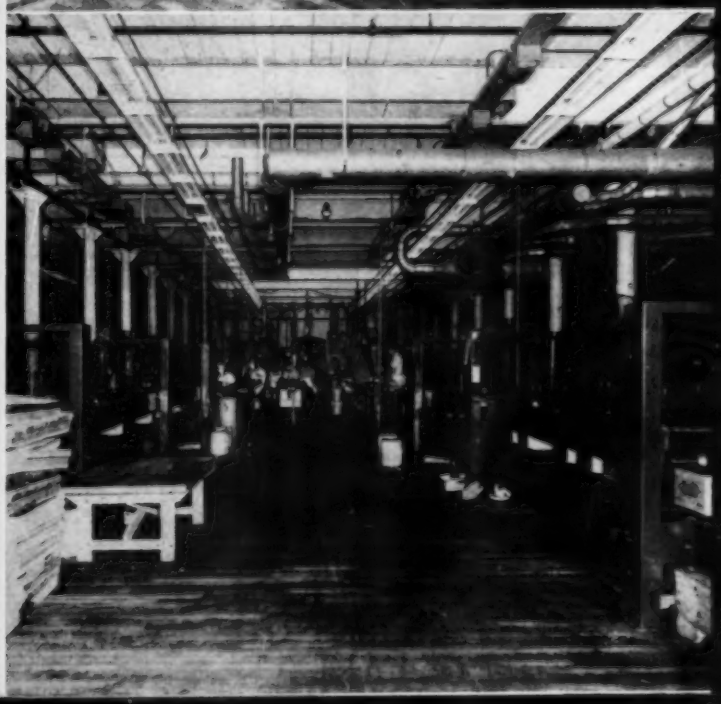
The first move from the old warehouse which housed the original plant was to small rented quarters on Main Street, Easthampton, and subsequently to the Westfield building on Arnold Street which now serves as administrative and sales offices. It was in 1946 that arrangements were made to take over the War Assets Terminal Warehouse in Easthampton and to convert this to a modern plant adequate to handle the manufacturing requirements of this expanding brush and chemical manufacturing business. Anderson-Nichols & Co., industrial engineers of Boston, were retained to analyze the needs of the company and to lay out operation in the new plant.

A thorough study was made of the various products which it was contemplated to make in the new plant, and a complete new modern manufacturing operation was set up.

Liquid chemical raw materials are stored in buried tanks or in tanks in the basement of an adjacent building. Control panels are so designed that measured quantities of any of these liquid chemicals can be delivered directly to their respective tanks. After the mixing equipment had been designed to handle quantities estimated to meet sales requirements, a study was made of the necessary equipment required for the full automatic filling lines. Two lines were designed to handle liquids and one to carry pastes. Recently, the paste line has been altered so that is is possible to run liquids as well as pastes on this same line. Provisions were made to handle automatically the empty containers stored on the third floor by connections with the first floor filling lines.

The latest type liquid fillers (U. S. Bottlers' Machinery Co.) were installed for the two liquid lines, with a sufficient number of filling heads to provide an ultimate production of ninety units per minute per filler. These fillers handle materials that vary widely in viscosity, from water-thin





liquids up to heavy furniture creams. Some of the products contain mild abrasives, while excessive foaming is inherent in other items. The latest type foam collecting and condensing equipment was furnished with the fillers, assuring a container filled to a controlled weight of product. Plastic container handling stars and centering guides are readily changed to permit the use of different sizes and shapes of containers. While filling, the containers travel on the "pitch line" with the result that no bottle holding forms, stirrups or locating devices are required to fit individual shapes of containers. Automatic capping equipment is employed to apply the closures, and automatic case sealing equipment completes the operation on the filling lines.

All equipment, including conveyors on all the automatic filling lines, is equipped with variable speed drives, and a master control panel for each line controls each piece of equipment on that line. Semi-automatic filling lines are used for items, the production volume of which does not warrant a full automatic line operation. Thus, by proper scheduling technique, the high production automatic lines operate only on items with large sales volume requiring a minimum of a week's operation. A well engineered and integrated conveyor system moves all cased stock from the carton sealers to warehousing storage. An independent conveyor system handles cased items from the warehouse directly into freight cars and trailer trucks.

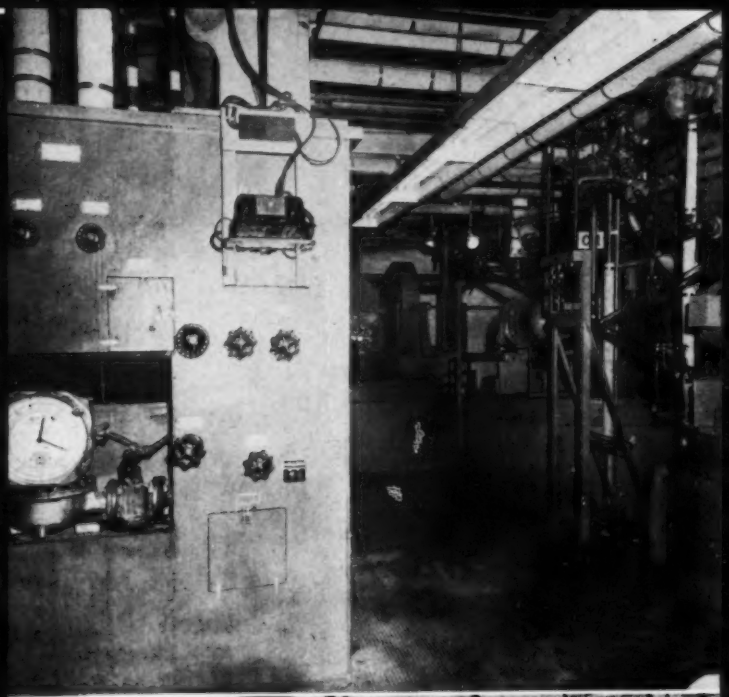
THIS installation is a far cry from the original small chemical specialty operation employing four or five people, with basic batch mixing in small tanks and hand filling and capping operations. Even the operations in Plant 4 in Westfield, which was acquired in 1940, and which occupied the first and second floors for chemical mixing, filling and packing, are dwarfed by this new operation in the Easthampton plant. A new control laboratory has been set up, and to provide for new products research and investigation of new raw materials, a development laboratory has been established in which prospective additions

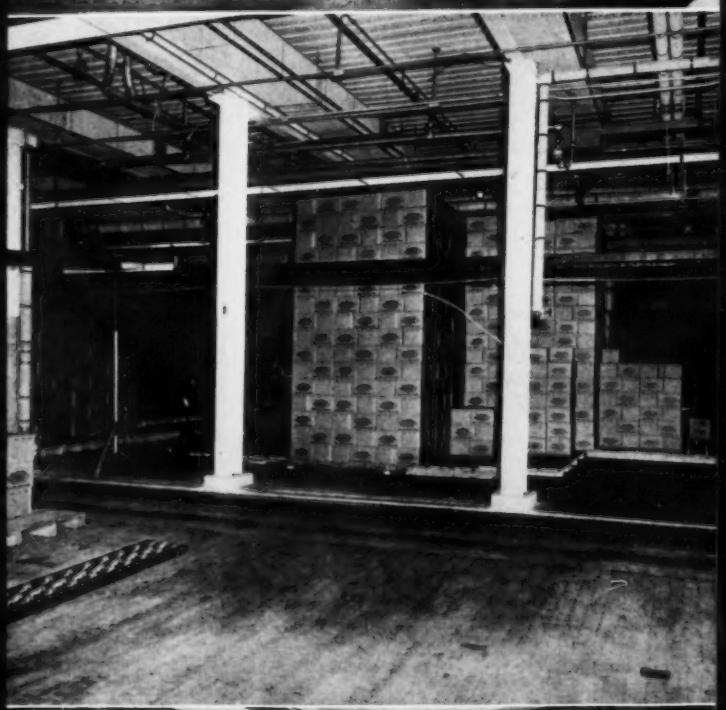
to the Stanley line of 98 products are in the process of exploration.

New equipment and a modern plant alone are not responsible for the high productive capacity of this new unit. The welfare, safety and security of its associates have always been of paramount importance to the company. Paid rest periods are provided both morning and afternoon, and coffee and doughnuts are given all workers during the morning rest period. A profit-sharing wage dividend, as well as a quarterly bonus, is a part of the remuneration received by a Stanley employee. Group insurance, together with a self-insured compensation program, provide added security. There is a self-governing body for employees, called the Stanley Council, which is a reflection of one of the basic Stanley ideas that the greatest asset of a business is the good will of all its workers.

Mr. Beveridge, Stanley president, is also responsible for Stanley Park, located in Westfield, a beautiful picnic spot used for sales assemblies throughout the summer by Stanley dealers visiting Westfield and Easthampton, and also available for use by all Stanley employees and the general public. The Stanley Choral Group, rated as one of the best industrial choral groups in the area, is another popular institution which helps cement good relations with the community. A new carillon tower is now being erected in the park which will further signalize the company's contributions, not only to the family of Stanley workers but to the community as well.

Products made by Stanley Home Products, Inc., include a complete line of household chemicals, and household brushes and mops. The household chemical specialty products include floor waxes, automobile polish, silver cleaning polishes, metal polish, furniture polish, paint cleaner, detergents and shampoo.





DCAT Luncheon Jan. 24

A mid-winter luncheon meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade will be held Thursday, January 24, at the Hotel Astor. Charles P. Walker of Citro Chemical Co. is chairman of the luncheon.

KRANICH SOAPS

Kranich standard soaps are manufactured and produced entirely in our own factory. All soaps are manufactured from fatty acids distilled and vegetable oils refined by us. All alkalies are dissolved and settled to remove impurities. All soaps are HEAVY METAL free (new technique).

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PHARMACEUTICAL

U.S.P. Green Soap
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KRANICH SOAPS

TRADE NEWS

Lever Names New Advertising Managers

G. B. SMITH H. R. BLOOMQUIST P. LAIDLEY

FOUR appointments to the advertising department of Lever Bros. Co., New York, and the creation of the new post of television manager, were announced recently by James A. Barnett, vice-president in charge of advertising. Howard R. Bloomquist, formerly advertising manager of Toni Co., Chicago, has joined the firm as advertising manager for a group of the company's products. At one time he was assistant advertising manager for Pillsbury Mills, Minneapolis, Minn. Appointed as advertising manager for another group of Lever Products is George B. Smith, who had previously been package goods account executive with Foote, Cone & Belding, New York advertising agency. Earlier Mr. Smith was associated with Standard Brands, Inc. Paul Laidley has left Fred Gardner Advertising Agency, New York, to become advertising manager for still another group of Lever brands. Appointed to the post of media director for Lever is George T. Duram, who previously held a similar post with the New York office of Dancer-Fitzgerald-Sample, Inc. The newly created position of television manager is now filled by John R. Allen, who left Grant Advertising Agency, New York, to accept the assignment. He coordinates and supervises all Lever television activities. At one time Mr. Allen had his own television consulting firm.

◆

Joseph A. Grober is Dead

Joseph A. Grober, 81, president and general manager of Albany Soap Corp., Albany, N. Y., died Dec. 18 at his home in Albany. A native of Cohoes, where he attended St. Barnard's school, at the age of 19 he became manager of Grant's Soap Co. in Cohoes. Later he was foreman at American Soap and Washoline Co., also of Cohoes. In 1911, he purchased the Albany concern, then known as Christian Brothers Soap Co. He was a member of Albany Lodge of Elks and the Foresters of America. He is survived by his widow, the former Magdalena Beck, and two daughters, Miss Madeline M. Grober and Mrs. Harry J. Geier, of Albany.

◆

New Diversey Coast Plant

Diversey Corp., Chicago, manufacturers of industrial detergents and cleaners, recently announced plans to establish a branch plant at 5720 Imperial Boulevard, South Gate, Calif., a suburb of Los Angeles. The new plant will provide 21,000 square feet of floor space and an additional acre of land, served by a railroad spur track. The property has been leased for five years, with an option for another five. Total rental for the ten-year period is reported as being $90,000.

◆

P & G Coast Soap Plant

Procter & Gamble is erecting a three-story, concrete building at its plant in Long Beach, Calif., for the production of non-soap detergent and shampoo products. Construction is nearing completion and the plant is expected to be in operation early in 1950. The plant is the first American installation of the Italian Donora hydrogenation process which operates at high enough pressures to convert the glycerides and fatty acids directly into the fatty alcohols. It is said to be more economical than the sodium reduction process.

◆

William H. Purdy Dies

William H. Purdy, 55, owner of W. H. Purdy Soap Co., Brooklyn distributing firm, died Dec. 1 at Methodist Hospital, Brooklyn. He had worked with several soap companies prior to the formation of his own firm in 1924. Mr. Purdy is survived by two brothers and a sister.

◆

P. I. Cuts Soap Imports

Sizeable reductions in imports of soaps, shampoos, toiletries, dentifrices and some fats and oils were announced recently by the government of the Philippine Islands in an effort to bring its imports into a more favorable balance with its exports. Soaps, shampoos and toiletries will be cut 90 percent below amounts brought into the Islands in 1948; dentifirices are reduced to 50 percent and reductions of 95 percent were ordered for lard, vegetable oils and fats.

Soap Assn. Meets Jan. 25-26

WHAT'S ahead in 1950 from the standpoints of the general economic outlook, marketing, raw materials and in the battle between synthetic detergents and soaps will be thoroughly aired at the 23rd annual convention of the Association of American Soap & Glycerine Producers, to be held Wednesday and Thursday, Jan. 25 and 26 at the Hotel Plaza, New York. In addition to forecasting the trend for the coming year, and reviewing conditions in 1949, time and attention will be given to the establishment of three divisions within the framework of the association. The divisions: Glycerine, Industrial Soap and Specialty Soaps, the setting up of which was recommended at the last annual meeting, will elect chairmen and steering committees.

Other meeting highlights are talks to be given by high government officials, including Secretary of Agriculture Charles F. Brannan, who spoke at the 1949 gathering. Also from Washington will come Charles Lund, Chief of the Fats and Oils Section of the Office of International Trade of the Department of Commerce. With J. C. Faure, director of purchases of Unilever, Ltd., London, he will comment on the "Fats and Oil Outlook for 1950".

The social side of the convention will again feature group luncheons, at which nationally prominent speakers will appear, cocktail parties and receptions on both evenings of the meeting, which will be topped off with the annual banquet, providing entertainment and dancing, on Thursday evening Jan. 26. Breakfast, compliments of *True Story* magazine, is being served in the Oak Room of the Plaza from 7:15 until 9:00 a.m. Thursday morning, Jan. 26. An additional attraction for women guests, to whom a special appeal for attendance is being made this year, is a "Maid of Cotton" fashion show, sponsored by the National Cotton Council, and scheduled for Wednesday afternoon, Jan. 25, from 2:30 p.m. to 3:30.

Of wide interest is the discussion programmed for the industrial

CHARLES LUCKMAN

soap division meeting which brings together John W. McCutcheon, consultant specializing in detergents and co-author with Dr. E. G. Thomssen of the book "Soaps and Detergents", and Dr. Foster D. Snell, head of the research and consulting firm bearing his name and a specialist on problems of detergency. They will debate the question of "Industrial Applications of Soaps and Detergents". Ira P. MacNair, publisher of *Soap & Sanitary Chemicals*, will act as presiding officer. A question and answer period will follow two five minute rebuttal periods.

Officially, the convention opens with registration from 8:30 to 10:00 a.m. on Wednesday morning, Jan. 25. During this time, too, will be a get-acquainted period. The next half-hour will be devoted to an address of welcome and a review of the year by Charles Luckman, AASGP president E. G. Nourse, formerly chairman of President Truman's Economic Advisory Committee, in the period from 10:30 to 11:15 a.m., will speak on the "Business Outlook for 1950". Following this, a presentation, "Market Research—Soap Industry Pictures" by Phil Stomberg of A. C. Neilsen Co., New York, will occupy the hour from 11:15 to 12:15. A group luncheon (12:30-2:00 p.m.) is to be the next order of business. A prominent speaker, whose name was not available at this writing, is scheduled to deliver a post-luncheon address.

A 45-minute closed meeting of Soap Association members will run from 2:05 to 2:50 p.m., during which time reports of the association manager and committees will be given and directors elected. The hour from 3:00 to 4:00 p.m. will be set aside for a meeting of the association's board of directors. A concurrent session (from 3:15 to 5:00 p.m.) of the Glycerine Division will take place, during which a "Review and Outlook of the Glycerine Situation" will be presented by N. N. Dalton, AASGP consultant on glycerine. During the session a chairman and steering committee will be elected. Also at this time, Carl Miner, Jr., of Miner Laboratories, Chicago, will discuss the "1950 Research Program". "Glycerine Advertising and Publicity Program for 1950" is the topic slated for coverage by Scott Pattison of G. M. Basford Co., New York advertising firm. The concluding feature of the first day's program is a cocktail party from 6:00 to 8:00 p.m., sponsored by *This Week* magazine.

The breakfast in the Oak room, for which *True Story* magazine is host, opens the second day's activities. Discussion sessions begin at 9:30 a.m., with a study of the fats and oils market by Messrs. Faure and Lund, mentioned above. The tentative program calls for a panel discussion: "Synthetic Detergents—Today and Tomorrow". Participating will be Dr. Arthur Herschberger of Atlantic Refining Co., Philadelphia, and two speakers, whose names have not as yet been announced to cover the situation as it affects animal fats. A question and answer period will follow formal talks.

Charles F. Brannan, Secretary of Agriculture, will address the group luncheon, which begins at 12:30 p.m. The first feature of the afternoon portion of the program is a talk on "Industrial Relations" by Professor Leo Wolman of Columbia University. He is scheduled to speak at 2:10 p.m. At 2:45 p.m., the Specialty Soap Division is slated to meet to elect a chairman and a steering committee, as well as to discuss plans for the future. Another division meeting, that of the Industrial

Soap group is to be held on Thursday afternoon, Jan. 26, at 3:45 p.m. Besides the conducting of the division's business: electing a chairman and steering committee, the McCutcheon-Snell discussion of "Industrial Applications of Soaps and Detergents" will be presented.

A reception and cocktail party are to be held from 6:30 to 7:30 p.m., immediately preceding the banquet, which is to run through until 12:00 midnight. Gen. Carlos P. Romulo, Philippine Ambassador to the U. S., and president of the U. N. General Assembly will speak at the banquet.

Although there is no registration fee for the meeting, luncheons will be charged for at the rate of $5 each, with the banquet $10.

Roy W. Peet, Manager of the A.A.S.P.G. is assisting John O. Brownell of Lever Brothers Co., New York, chairman of the convention committee, which includes: R. C. Carmel of H. Kohnstamm & Co., New York; B. F. Flynn of Pacific Coast Soap Co., Los Angeles; Melvin Fuld of Fuld Brothers, Inc., Baltimore; F. B. Patton of Armour & Co., Chicago; G. P. Peck of Peck's Products Co., St. Louis; H. Theobald of Theobald Industries, Kearny, N. J.; W. G. Werner of Procter & Gamble Co., Cincinnati, and M. L. Westerling of Swift & Co., Chicago.

Dubois Buys Giant Products

The Dubois Company, Cincinnati, manufacturers of soaps, detergents and cleansers, has purchased the business and plant of the Giant Products Co., Los Angeles, Calif. for a reported half-million dollars. Giant Products manufactures and distributes household and industrial cleansers in the Western states. Acquisition of the Los Angeles company, according to T. V. Dubois, president of Dubois Co., gives his company improved facilities for handling its growing business on the West Coast.

Plant Maintenance Show

The Plant Maintenance Show will be held at the Auditorium, Cleveland, O., Monday through Thursday, Jan. 16-19.

ADACIOM Elects Draper

Neal M. Draper, manager of the St. Louis branch office of the Solvay

NEAL M. DRAPER

Sales Division, Allied Chemical & Dye Corp., New York, was recently elected president of the Associated Drug & Chemical Industries of Missouri for 1950. He succeeds Marvin Yates of Marvin Yates Co. Mr. Draper was first vice-president of the association in 1949, is a native of St. Louis, and was graduated from Washington University, there.

Hardesty Forms Own Firm

William C. Hardesty, formerly president of W. C. Hardesty Co., New York, recently left that firm and established Hardesty & Co., with offices in room 3018, 60 E. 42nd St., New York. The telephone number is Murray Hill 2-7974. He organized W. C. Hardesty Co. in 1926, having previously been with Wilson-Martin Division of Wilson & Co., Philadelphia. At one time he was vice-president of D. B. Martin Co., which was later acquired by Wilson. He was also a vice-president of J. Eavenson & Sons, Camden, N. J. Mr. Hardesty's new company will deal in stearic acid, red oil, hydrogenated oils and vegetable fatty acids of all types.

WILLIAM C. HARDESTY

Succeeding Mr. Hardesty as president of W. C. Hardesty Co., which continues at 41 E. 42nd St., is A. F. Kitchel. Other officers include W. J. O'Connell, vice-president; E. Jobbins, vice-president, and F. R. Cantzlaar, secretary and treasurer.

Supreme Court Backs C-P-P

The U. S. Supreme Court recently reversed a charge of unfair labor practices against Colgate-Palmolive-Peet Co., Jersey City, N. J. over the releasing of 37 employees at its Berkeley, Calif., glycerine plant. The court reversed a ruling of the Court of Appeals for the Ninth Circuit, which ordered the company to comply with a ruling of the National Labor Relations Board. The N.L.R.B. ruled that Colgate-Palmolive-Peet Co. was guilty of unfair labor practice by releasing 37 employees at the request of the C.I.O. union which the employees sought to have replaced by an A.F.L. unit. The company at the time had a closed shop contract with the C.I.O. The N.L.R.B. ordered the firm to rehire the employees and was sustained in its order by the Circuit Court of Appeals.

Soap Prices Cut

Soap price cuts ranging from four to seven percent were announced by three soap companies late in December. Price reductions of four percent on the wholesale price of household soap products were announced by Procter & Gamble Co., Cincinnati, and by Kendall Manufacturing Co., Lawrence, Mass., on its "Soapine" granulated soap. A similar action was taken by Lever Brothers Co., New York, in dropping wholesale prices on soap from four to seven and one-half percent. Both P&G and Lever simultaneously anonunced price cuts on their shortenings.

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Phase Study of Commercial Soap—Alkaline Electrolyte-Water Systems—Reynold C. Merrill—Industrial and Engineering Chemistry—February, 1947.

A Phase Study of Sodium Palmitate-Alkaline Electrolyte-Water Systems—Reynold C. Merrill and Raymond Getty—Journal of the American Chemical Society—August, 1947.

Phase Study of Rosin Soap-Sodium Chloride-Water and Rosin Soap-Sodium Silicate-Water Systems—R. C. Merrill and Raymond Getty—The Journal of Physical and Colloid Chemistry—January, 1948.

Silicates in Soaps—R. C. Merrill—The Journal of the American Oil Chemists' Society—March, 1948.

The Effect of Alkaline Electrolytes on Micelle Formation in Soap Solutions—Reynold C. Merrill and Raymond Getty—The Journal of Physical and Colloid Chemistry—May, 1948.

Solubility Study of an Aqueous Potassium Laurate-Potassium Silicate System—Reynold C. Merrill—The Journal of Physical and Colloid Chemistry—October, 1948.

Potassium Silicates in Soaps—R. C. Merrill and Raymond Getty—The Journal of the American Oil Chemists' Society—January, 1949.

T. G. A. Scientific Section Meets

MORE than 350 members and guests attended the annual meeting of the scientific section of the Toilet Goods Association held December 7 at the Hotel Waldorf-Astoria, New York. Dr. Edward J. Masters, Helena Rubinstein, Inc., New York, was elected vice-chairman of the section to succeed Dr. Albert Paccini. Dr. R. Pantaleoni presented the report "Fatty Alcohol Sulfates for Shampoo" by R. Pantaleoni, J. A. Shanks and E. Valentine, E. I. du Pont de Nemours & Co., Wilmington, Del. Four fatty alcohol sulfates for use in shampoos were discussed, two of which were sodium salts, and two triethanolamine salts of mixed fatty alcohol sulfates. Studies indicated that preparations with the pure sulfates were not as good detergents as those made with mixed fatty alcohol sulfates.

The effect of adding various compounds to shampoo formulas was also reported. Tests indicated that the addition of magnesium stearate and lanolin reduces foam rating; the addition of glycerine monolaurate has no effect on foam. Magnesium stearate imparts body and tack to the product; cetyl alcohol acts as a stabilizer and whitener. Polyvinyl alcohol is a good emulsifier, and improves viscosity and tack; methyl cellulose also improves body and tack. Sodium alginate functions well as a thickener and is used satisfactorily in the clear type shampoos.

The paper "Fragrance and Stability of Cosmetics with Especial Reference to the Acetals" by Carl K. Wellenkamp, Verona Chemical Co., Newark, N. J., dealt with the lasting quality and shelf life of odors in cosmetics with special reference to the acetates. The effect of some of the common aromatics on the stability of cosmetic emulsions and soaps was mentioned in the course of the report.

The paper on "Factors in the Determination of Odor Intensity in Mouth and Expired Air" by R. R. Read, P. P. Morris and W. G. Fredell, Lambert Pharmacal Co., New York, dealt with the evaluation and control of halitosis. John H. Draize and Elsie Alvarez, Food & Drug Administration, Washington, D.C. presented the paper "Discussion of Certain Aspects of Pharmacological Tests on Cosmetics", which dealt with the testing of certain chemicals included in cosmetic formulations, and their consideration as to effect on human skin.

Some of the theories of emulsions were considered and several of the important newer emulsifying agents were classified in the paper on "Cosmetic Emulsions" by Saul A. Bell, Evans Research and Development Corp., New York. Dean Foster, Joseph E. Seagram and Sons, Inc., New York, presented the paper "Anosmic Reactions to Odors".

Some of the newer developments in pharmacological agents which may be of value in cosmetic formulations, with reference to the dermal penetrating properties were discussed by Lloyd W. Hazelton, Hazelton Lab., Falls Church, Virginia, in the paper "Pharmacological Agents in Cosmetic Formulation". A discussion on product development, from bench formulation to pilot plant sized batches, was included in the paper "The Pilot Plant. Why a Pilot Plant is Necessary in Drug and Cosmetic Development" by P. C. Wieseman, Norwich Pharmacal Co., New York.

Honor Fritzsche Veterans

Two veterans of Fritzsche Brothers, Inc., New York, were recently honored on completion of 25 years' service with the company. Dr. Ernest Guenther, vice-president and technical director of the firm, whose third volume of "The Essential Oils" has just been published, was guest of honor at a dinner at the New York Athletic Club, Dec. 1. On the same date, Lloyd Speck, manager of Fritzsche Brothers of Canada, Ltd., was tendered a luncheon at the Royal York Hotel, Toronto. Dr. Guenther was presented with a bond and a Persian rug. F. H. Leonhardt, president of the company, J. H. Montgomery, vice-president and treasurer and other officers and directors and regular members of the Fritzsche Quarter of a Century Club attended the dinner. Mr. Leonhardt spoke, reviewing the important role played by Dr. Guenther. John L. Cassullo, assistant treasurer of Fritzsche was present and represented his company at the luncheon for Mr. Speck, who also received a bond and an engraved, gold watch.

Mich. Alkali Div. Shifts

A number of shifts in personnel were announced recently by the Michigan Alkali Division of Wyndotte Chemicals Corp., Wyndotte, Mich., as a result of the firm's expanding activities in manufacturing organic chemicals and growth in the heavy alkali and other inorganic fields. Among those advanced or reassigned to duties at the home and New York offices were: Howard F. Roderick, general sales manager, with Paul M. Bigley as his assistant. Melvin E. Clark is managing chlorine as well as heavy alkali sales, with Fritz M. Zorn, as assistant. Departmental managers include: L. C. Reid, organic chemical sales; V. H. Vodra, calcium carbonate sales, and Robert Rigger, export department. Charles S. Johnson is director of technical service and Paul E. Burchfield is his assistant. Other managerial posts are held by: L. D. Dodson, calcium chloride and public business sales, F. R. Sproule, assistant to Mr. Dodson; Paul Weller, market research; C. J. Diehl, advertising department; T. R. Boyle, sales records; S. B. Scott, district manager of New York, assumes duties formerly performed by the late George Dunning. R. W. Moister is assistant district manager, New York.

Bristol-Myers Shifts Allen

Joseph M. Allen, formerly vice-president in charge of advertising, was recently appointed vice-president in charge of public relations for Bristol-Myers Co., New York. Wallace T. Drew, Donald S. Frost and Roger C. Whitman have been advanced to positions as advertising managers.

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Cosmetic Chemists Elect Rider

THEODORE H. RIDER, Lever Bros., Cambridge, Mass., was elected president of the Society of Cosmetic Chemists at the semi-annual technical meeting held in the Savoy Plaza, New York, on December 8. Serving with him for the coming year will be the following: Everett G. McDonough, Evans Chemetics, Inc., New York, vice-president; Ruth R. Bien, Good Housekeeping Inst., New York, secretary; Emery A. Emerson, Wildroot Co., Buffalo, N. Y., treasurer; S. D. Gershon, Pepsodent Div. of Lever Bros., New York, director; and Paul G. Lauffer, George W. Luft Co., New York, director.

A report on a new type of nonionic beeswax derivative was presented in the paper "Hydrophilic Beeswax Derivatives" by P. J. Carter and W. C. Griffin, Atlas Powder Co., Wilmington, Del. The derivatives find most application in soap free formulas, however they can be used also as auxiliary emulsifiers in soap type preparations. The derivatives serve two functions in cosmetics: as emulsifiers, and second as cosmetic ingredients replacing beeswax whenever the latter appears in a formula. In the discussion following the report, it was pointed out that there was no evidence of foaming in the course of the investigations.

Three papers were presented in a symposium on ammoniated dentifrices. Dr. R. G. Kesel, Univ. of Illinois, reviewed the inhibiting effect of ammonia nitrogen on *Lactobacillus acidophilus* and reported on tests on the effectiveness of other ammonia salts when used in this capacity. Satisfactory results were obtained with a preparation containing five per cent diammonium phosphate and three per cent urea. Dr. C. J. Henschell, Eastern Graduate Research Foundation, reported on the "Clinical Evaluation of Ammoniated Dentifrice Therapy," pointing out that today, the tooth brush and dentifrice may be considered prophylactic. A controlled experiment over a three year period showed caries reduction from 35.2 to 41.9 per cent on use of ammoniated dentifrices. T. J. Hill, chairman of the Council on Dental Therapy, American Dental Association, presented a "Critical Evaluation of the

THEODORE H. RIDER

Evidence of Ammonium Dentifrice Therapy" in which he pointed out that "until the carefully controlled clinical experiments, now in progress, are completed, the use of ammonia salts to control dental caries is experimental."

Dr. Louis C. Barail, U. S. Testing Co., Hoboken, N. J., discussed the "Introduction to the Use of Radioisotopes in Cosmetic Chemistry", in which he reported investigations on cosmetic penetration into the skin. Cold cream "tagged" with Carbon 14 was applied to the skin and checked with a Geiger counter. At no time was there any indication of cold cream penetration into the skin.

Reports of skin reactions and toxic effects from cold wave lotions were not substantiated by tests on 1,200 women, according to Dr. Howard T. Behrman, New York University College of Medicine in presenting the paper, "Cold Wave Lotions: Their Cutaneous and Systemic Effect." The equilibrium moisture holding power and rate of moisture loss of humectants were outlined in the paper "Sorbitol in Cosmetics" by W. C. Griffin, R. W. Behrens and S. T. Cross, Atlas Powder Co., Wilmington, Del.

Ernest C. Crocker, Arthur D. Little, Inc., Cambridge, Mass., presented "The Rationale of Odor Classification" and Edward Sagarin, Givaudan-Delawanna Co., New York, countered with his paper "On the Inherent Invalidity of all Current Systems of Odor Classification."

FTC Cites Ipana Claims

Bristol-Myers Co., New York, was recently ordered by the Federal Trade Commission to stop advertising that its "Ipana" toothpaste will prevent "pink tooth brush". In addition to directing the company to discontinue alleged misrepresentations as to the therapeutic value of its product, the F.T.C. also told the firm to stop claiming that "Ipana" is used personally by twice as many American dentists or recommended by more of them to their patients than any other two dentifirices combined. The company, through its president, Lee H. Bristol, has announced that it will undertake a legal fight against the F.T.C. order. Specifically the F.T.C. ordered the company to stop claiming that massaging with "Ipana" is helpful to the gums and teeth; that soft, well cooked foods do not give gums and teeth sufficient exercise. The commission said that the firm may continue its advertising claim that "Ipana" will beautify the smile and brighten and whiten the teeth.

At a hearing conducted by the Federal Trade Commission in New York recently, Revlon Products Corp., New York manufacturer of cosmetics, was charged by the F.T.C. with making oral agreements with its jobber distributors to exclude handling of competitive products. In the action, brought by the commission, the company is accused of violating Section 3 of the Clayton Anti-Trust Act in the sales of its products to jobber distributors. These distributors, who sell to the beauty shop trade, are required orally or in writing to carry Revlon products exclusively, according to the F.T.C. The process by which many distributors decided to "push" "Revlon" enamel, Martin Revson, president, stated, was a volutary action taken after the distributors had been "sold" on a mutually profitable business arrangement.

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Toronto 3, Canada

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Surface Active Agent Output Up in '48

PRODUCTION of surface active agents in 1948 totaled 375 million pounds, a gain of 28.9 per cent over the previous year's output of 291 million pounds, according to figures contained in the "Synthetic Organic Chemicals" report for the year, issued recently by the United States Tariff Commission, Washington, D. C. The report, the 32nd issued by the Commission, shows production of synthetic organic chemicals in 1948 as 18.5 billion pounds, the largest of any year. Sales of surface active agents in 1948 amounted to 275 million pounds, worth 88 million dollars, as compared with 234 million pounds, valued at 61 million dollars in 1947. Production in 1948 of sulfated and sulfonated (ion-active) materials of both cyclic and acyclic types combined totaled 326 million pounds; sales were 233 million pounds, valued at 69 million dollars. In volume of production the principal items in this group were the alkyl benzenoid compounds (101 million pounds); aliphatic and aromatic petroleum sulfonate (64 million pounds); and oils, fats and waxes (35 million pounds). Production in 1948 of all polyhydric alcohol ethers and esters (generally nonionic materials) totaled 26 million pounds, or about seven per cent of the total output of all surface agents. Production of nonsulfonated nitrogen-containing compounds (chiefly cation active materials) totaled 18 million pounds in 1948, or about five per cent of the combined output of all surface active agents.

In the miscellaneous synthetic organic chemicals group, production figures on certain types of insecticidal materials are given. Total output for all types of insecticides listed is given as 54,378,000 pounds for 1948. Sales were put at 56,136,000 pounds, worth 18,859,000 dollars. Insecticides listed include: DDT, 4,6-Dinitro-o-Cresol, and benzene hexachloride.

Naphthalene production for 1948 is given as 327,556,000 pounds, as against 314,721,000 pounds for 1947. Sales of naphthalene in 1948 amounted to 248,008,000 pounds, valued at 13,439,000 dollars.

In addition to tables showing production and sales volume in terms of pounds and dollars, figures are given on each type product in the various categories and names of manufacturers are indicated. Copies of the report are available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 40 cents per copy.

Oct. Fat Use in Soap Down

Consumption of fats and oils in soap declined by six million pounds during October, 1949, compared with the previous month, according to figures released recently by the Bureau of the Census of the U. S. Department of Commerce. Reported consumption of fats and oils in soap in October was put at 175,191,000 pounds. The principal decline in fat and oil consumption in soap was in refined tallow. In October, total consumption of tallow amounted to 20,260,000 pounds, as against 26,877,000 pounds in September. Crude coconut oil consumption was put at 31,751,000 pounds for refining in October, as compared with 32,923,000 pounds in the previous month. For other than refining, crude coconut use was reported as 23,497,000 pounds, as against 21,615,000 pounds. Rendered lard consumption amounted to 11,460,000 pounds in October, a decline from the 11,924,000 pounds reported consumed in September.

To Make Folding Cartons

J. H. Crones, president of W. C. Ritchie & Co., Chicago, announced recently that starting next month the company will engage in the manufacture of folding cartons. The firm presently makes set-up boxes. Harold Bentz will be superintendent of the new division which will concentrate mainly on the quality field. All manufacturing facilities of the company remain in Chicago, with distribution on a national scale and sales representatives in the larger cities.

D&O News on Yugoslavia

Yugoslavia as source of essential oils is discussed in the recently issued Nov.-Dec. issue of "D & O News", published by Dodge & Olcott, Inc., New York. Oil of sage and oakmoss are two of the leading essential oils exported from Yugoslavia, according to "D & O News". Heliotropin and vanilla beans are also covered in the current issue, which includes a biographical sketch of Reuben B. Houk, the firm's chief perfumer.

Colgate Travelers' Aid Chm.

John F. Colgate, a director of Colgate-Palmolive-Peet Co., Jersey City, N. J., recently accepted chairmanship of the Soap division of the 1949 fund drive of the Travelers' Aid Society of New York, it has been announced. The campaign, now in progress, has a goal of $350,000.

Cohen in Florasynth Post

Dr. Harry Cohen was recently appointed head of the Chicago research department of Florasynth Laboratories, Inc., New York. A graduate of the University of Illinois, where he received his A.B. and M.S. degrees, Mr. Cohen received his doctorate from the University of Wisconsin. Following a post-doctorate fellowship at the California Institute of Technology, he became associated with the food industry.

Sterling Buys Puhl Stock

Acquisition of all the issued and outstanding stock of John Puhl Products Co., in exchange for 36,000 shares of its own common stock, was announced recently by Sterling Drug, Inc., New York. The transfer extends Sterling's interest in the cleaner field, according to the announcement. Puhl Products is the maker of ammonia, bleaches and blueing. Three Puhl officers who have resigned include R. J. Puhl, president; F. G. Russell, vice-president and William J. Keenan, treasurer.

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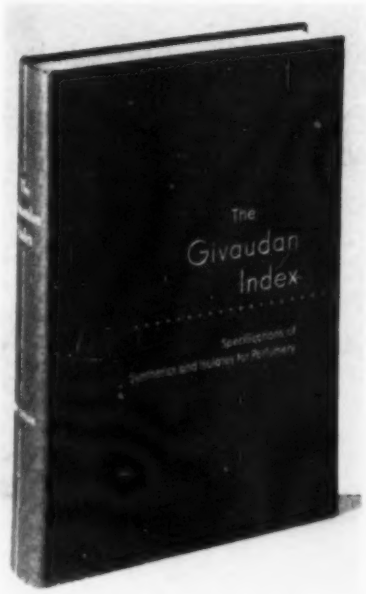
Givaudan Index Lists Aromatics

As part of the celebration of its 25th anniversary in the United States, Givaudan-Delawanna, Inc., New York, recently announced publication of the *Givaudan Index*, a 378 page reference book for soapmakers and all other users of synthetic aromatic chemicals.

Carrying the subtitle, "Specifications of synthetics and isolates for perfumery," the *Givaudan Index* presents a comprehensive specification for every aromatic chemical and essential-oil isolate in common usage in perfumery. Products covered range from acetanisole to zingerone, to mention the alphabetical range; from the most frequently employed substances such as phenyl ethyl alcohol to macrocyclic musk, Thibetolide, and the newest synthetics from the Givaudan laboratories. At the top of each page is the name, of a compound, for example, geraniol. Opposite the name are its translations into French, German, and Spanish. The empirical and structural formulas are then presented, and the molecular weight, together with the alternate nomenclature, in this case consisting of the Geneva system of naming organic compounds.

There follows the natural occurrence of the material, some substances being unknown in nature, others widespread. "Found in many oils, such as geranium, rose, linaloe, citronella," the geraniol page reads, and the enumeration continues until over 30 oils have been named. After this, physical properties are given and the grades in which it is available. Also listed are minimum purity, wth a specific method of assay for determination of this purity; a range of physical constants (gravity, refractive index, optical rotation, etc.), and impurities, in this case the maximum percentage of total esters, calculated as geranyl acetate. This, too, is presented with the analytical procedure recommended for its determination. Finally, the constants are concluded with a maximum acid value.

Rounding out this information is a brief statement on the stability of the material and its tendency, if any, to induce discoloration; specific



alcohol-solubility data ("all grades of geraniol are soluble in 2 volumes of 70% alcohol"); recommendations for storage, and description of the uses of this substance.

Into this book there has been placed an experience with the substances described that dates back to 1895 in Geneva, home office of the Givaudan organization, and to 1924 in America. It was impossible to set limits of a single constant for any product without a study of the analytical records for years back. Literally tens of thousands of such records were studied and evaluated in setting up the specifications.

The Index opens with an historical note, continues with a brief statement on the interpretation and use of analytical data, followed by the specifications. As a first appendix, analytical procedures are given in fullest detail, covering the determination of total alcohols, esters, aldehydes and ketones, determination of linalool. saponification values, congealing and melting points, and other constants. An alcoholometric table and a standard container table are to be found, and an odor classification of aromatic chemicals ,according to floral types which they suggest or in which they are widely used. At the end of the book, there are indices in English, French, German, and Spanish.

This is not the first work offering data on synthetics, but, to employ the words of the book itself, "the documentation on synthetics has not kept pace with that of natural materials. Here and there, in scattered literature, or perhaps as a section of a treatise on essential oils, descriptions of synthetics utilized in perfumery are to be found. What has been lacking is such data, emanating from the source of manufacture, offering information that is not only scientifically correct and accurate, but that would coincide with the commercial product to be found on the market. The *Givaudan Index* is designed to fill that gap, offering for the first time a broad compendium of such data in a single volume."

Adaciom Xmas Party

The seventh annual Christmas party of the Associated Drug & Chemical Industries of Missouri, Inc., was held Dec. 14, at the Starlight Roof, Hotel Chase, St. Louis. A dinner-dance, the affair was preceded by a cocktail party.

Dental Meet in New York

The 25th Greater New York Dental Meeting was held December 5 through 9th at the Hotel Statler, New York. Included in the exhibits were dental cleaning preparations by Bristol-Myers Co., New York; Whitehall Pharmacal Co., New York; S. S. White Dental Mfg. Co.; and E. R. Squibb & Sons, Brooklyn. Mann Chemical Corp., Louisville, Ky., featured a superfatted bar soap at its booth.

Joins Lever as Analyst

Jack L. Gross, who was formerly with the research department of Biow Advertising Agency, recently joined Lever Brothers Co., New York, as senior analyst. He will make his headquarters at 80 Varick St.

The Maya Line

provides character and continuity to an entire line of products

Stable, economical and versatile, the Mayas are invaluable in maintaining a given fragrance throughout a line of related products such as a cream, cologne, powder, rouge, soap, etc.

The Mayas include such favorites as our Maya Fougère 4650 and our Maya Millefleurs 4707, a variety of fine Parisian bouquets, and a full line of fresh floral odors.

Write us about your products and we will be glad to offer suggestions and further details.

SCHIMMEL & CO., INC.

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NEW TRADE MARKS

THE following trade-marks were published in the December issues of the *Official Gazette* of the United States Patent office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Arresto-Moth—This for insecticides. Filed Apr. 26, 1947, by Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since Mar. 24, 1947.

CD—This for insecticide spray guns. Filed May 21, 1946, by Danville Manufacturing Co., Danville, Ill. Claims use since Apr. 1, 1946.

The following trade marks are published in compliance with section 13 (a) of the Trade Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of $25 must accompany each notice of opposition.

Southland—This for spot remover. Filed Feb. 26, 1948, by Southland Co., Yazoo City, Miss. Claims use since June 27, 1946.

Pentech—This for insecticides. Filed Apr. 2, 1948, by Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since Feb. 3, 1948.

Hooker Chemicals — This for benzene hexachloride. Filed Apr. 29, 1948, by Hooker Electrochemical Co., Niagara Falls, N. Y. Claims use since July 1, 1944.

Pro-Cop—This for copper soaps in organic solvents as fungicides. Filed Dec. 4, 1948, by Harshaw Chemical Co., Cleveland, O. Claims use since Sept. 27, 1948.

Ambiance—This for toothpaste. Filed Dec. 21, 1948, by Wolff Freres, Inc., New York. Claims use since Dec. 7, 1948.

Steramine—This for germicide. Filed Dec. 10, 1948, by Edwards-Councilor Co., Norfolk, Va. Claims use since Nov. 28, 1947.

O-Pro-Tex—This for foot fungicide. Filed May 6, 1949, by Stewart-Simmons, Inc., Mason City, Ia. Claims use since Sept. 15, 1948.

Joy—This for cleaner and detergent. Filed Oct. 9, 1948, by Procter & Gamble Co., Cincinnati. Claims use since June 19, 1920.

Tundra—This for toilet soap. Filed Dec. 3, 1948, by Les Parfums de Dana, Inc., New York. Claims use since Nov. 1, 1948.

Dun-Rite—This for detergent and degreasing agent. Filed June 7, 1949, by Trio Chemical Works, Inc., Brooklyn. Claims use since December, 1944.

Trust—This for liquid chemical preparation to be added to the cooling system of internal combustion engines for removing rust. Filed Aug. 16, 1948, by Karseal Corp., Hollywood, Calif. Claims use since May 1, 1948.

El Pico—This for liquid or chemical paint and varnish remover. Filed Aug. 19, 1948, by Landon Products, Inc., Los Angeles. Claims use since 1940.

Barker's—This for 25 per cent DDT concentrate. Filed July 16, 1948, by Barker, Moore & Mein Co., Philadelphia. Claims use since April, 1947.

Lowell—This for portable electric sprayers and dusters. Filed May 14, 1948, by Lowell Specialty Co., of Lowell, Mich. Claims use since Nov., 1930.

West—Filed April 12, 1948 by West Disinfecting Co., Long Island City, N. Y. This for automatic electric portable insecticide sprayers and hand manipulable electric insecticide atomizer. Claims use since Feb. 25, 1947.

Essential Oil Assn. Meets

The Essential Oil Association of the United States held its annual meeting and dinner at the Hotel Plaza, New York, Jan. 6. The association's scientific section met Dec. 8, at the Hotel McAlpin, New York, at an all day session to consider adoption of changes in proposed specifications for essentials oils.

Specifications for the following compounds were submitted and adopted during the course of the meeting. These specifications, which will appear in their entirety in the 1950 *Soap Blue Book*, include: "Methyl Acetophenone" and "Acetophenone" submitted by Dr. C. F. Berlinghoff, S. B. Penick & Co.; "Anisic Aldehyde" by Dr. Louis Hediger, Trubek Laboratories; "Diphenyl Oxide" by Dr. A. H. Behr, Dow Chemical Co.; "Ethyl Ester of Phenyl Acetic Acid" and "Methyl Ester of Phenyl Acetic Acid" by Dr. A. Fiore, Givaudan-Delawanna, Inc.; "Oil Lavandine" by Dr. G. V. Branigan, Ungerer & Co.; and "Oil Sage Dalmatian" by Dr. E. Langenau, Fritzsche Bros., Inc.

Testing Germicidal Soap

"Methods of Testing a Germicide Incorporated in Soap" are discussed in a paper by that name by Eugene F. Traub, M.D., published in the *Journal of the Society of Cosmetic Chemists*, June, 1949, which has just been issued. The article is based on a paper given at the 1948 mid-year meeting of the Society. The paper describes a series of experiments performed to observe the effect of continuing use of soap containing compound "G-11" in reducing the bacterial flora of the skin and decreasing the incidence of pyogenic skin infections. Clinical results indicated a significant decrease in the number and severity of carbuncles, furuncles, and cellulitis. The paper concludes that the continuous use of soap containing the bactericide is of marked value in the prevention of serious pyogenic skin lesions in institutional or other populations. The journal also contains an article by A. L. Van Ameringen of Van Ameringen-Haebler, Inc., New York, on "The Correct Scenting of Cosmetics".

Charles N. Waterman Dies

Charles N. Waterman, secretary and director of H. Kohnstamm & Co., New York, died Nov. 27 at his home in New York City after a brief illness. He had suffered a heart attack two weeks earlier. Mr. Waterman, who had joined the firm as an office boy in 1908, was 63 years old. For many years he directed the purchase of supplies and materials.

Cleaner to Grocery Field

The appointment of John H. Locke & Sons, Buffalo food brokers, to manage the sales in the U. S. of a waterless hand cleaner made by Banite Co., Buffalo, was announced recently. The product continues to be marketed in the automotive and hardware fields, in which it is distributed by about 2,000 wholesalers. A New York office, Johnny Hayes Co., for the metropolitan area, is being maintained by the Locke organization.

we're not the first rose of summer...

but you could never tell the difference by the smell!

We are known far and wide for the great *variety* of fragrant materials we supply to the soap industry. But we are especially proud of our specialties, which are recognized by perfumers throughout the world for their distinguished quality. You will find in our Rose No. 50, Geranium Synthetic No. 1086, Jasmin d'Espagne, Sophora No. 1128, Castoreum Synthetic, and many others, a happy alliance of the artistry of the perfumer and the scientific skill of the chemist. Their use can help you put more selling scents in your soaps.

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Spokane Brand Survey

SOAP and cleaner brand preferences in the Spokane, Wash., area are reported in the 1949 Consumer Analysis of that area, published recently by the *Spokane-Review* and *Spokane Daily Chronicle*. The survey is the third of its kind and gives information on waxes, dentifrices, shampoos and shaving creams, in addition to reporting on soap and detergent preferences. The current Analysis has one section devoted exclusively to soap and cleaners, and includes data on floor waxes, glass and brass cleaners, powdered scouring cleansers, synthetic detergents, wall and woodwork cleaners and water softeners. In the three categories: soaps for face and hands, for bath and for dishes, "Ivory" held top spot. "Camay" was in second place for the first two uses, with "Oxydol" placing second in the third. "Lux Flakes," "Ivory Flakes" and "Ivory Snow" finished in that order of preference for soap for fine fabrics. For household laundry "Oxydol" was most popular, followed in order by "White King," "Duz" and "Rinso." "Boraxo," "Lava" and "Lifebuoy" were listed in that order of preference as the preferred soaps for dirty hands. "Old Dutch" was the most popular of the scouring cleansers, with "Bab-O," "Scotch" and "Bon Ami" in second, third and fourth places, respectively. "Tide," with 34.5 per cent preference, led the synthetic detergents, followed by "Dreft," 27.1 per cent, and "Vel," 19.7 per cent.

In the miscellaneous cleaning products category, "Gold Seal" was given the highest preference as a glass and brass cleaner; "Spic and Span" carried off top honors in the wall and woodwork cleaners group. "Johnson" floor wax placed first, followed by "Simoniz," "Aerowax" and "Old English" in the floor wax preference ratings.

Most popular liquid shampoo was reported to be "Drene," which was followed by "Halo," "Breck" and "Fitch's" in that order. "Lustre-Creme" headed the list of paste shampoos, three percentage points ahead of "Prell," and 15 over "Toni." "Shasta Creme" was rated fourth.

"Colgate" was voted first among tooth pastes by a wide margin, second place honors going to "Pepsodent," and "Ipana" was third. In the tooth powder ratings "Dr. Lyon's" headed the list, with "Amm-i-dent" second and "Colgate" third. "Polident" denture cleaner was first in its class, far ahead of "Colgate" in second place and "Stanley" third.

Among shaving creams "Palmolive" gained top position by one percentage point over "Williams," which held a 2.1 per cent lead over "Colgate." "Mennen" with a percentage rating of 10.3 was fourth.

Lever Finishes Move to N. Y.

Executive offices and operating departments of Lever Brothers Co. are now located in two temporary locations at 505 Park Ave. and 80 Varick St., New York, pending completion of a new headquarters building on the west side of Park Ave. between 53rd and 54th Streets. Every available mover in the Boston area was required to transport the more than 150,000 pieces of office equipment from the Cambridge headquarters, which were vacated the weekend of Dec. 3-4, to New York. Headquarters of three Lever subsidiaries: Pepsodent Co. and John F. Jelke Co., both of Chicago, and Harriet Hubbard Ayer, Inc., offices of which have been located at 323 E. 34th St., New York, were to have been moved to New York headquarters on Jan. 1.

New Antiseptic Soap

A new antiseptic liquid soap, "Dysept", for use by hospitals, physicians, dentists, food handlers, surgeons and others in occupations where low skin bacteria count is required, was introduced recently by Davies-Young Soap Co., Dayton, O. It contains as the new active ingredient, hexachlorophene, in quantities of five percent to the anhydrous soap content. According to an illustrated clinical brochure on "Dysept" recently issued by the company, laboratory tests have shown the material to be both bactericidal and bacteriostatic. Daily use of the soap is said to reduce bacterial skin flora to about five percent of the usual number. An invisible film is said to be left on the skin after use and is not removed by rinsing, thus rendering the skin bacteriostatic with application of one to three times daily for at least five days a week. Further claims for the product are that it permits a reduction in surgical scrub-up contact time with daily use; it is reportedly non-irritating and non-toxic; it acts effectively even when diluted with water. The clinical brochure containing laboratory reports, suggestions for use and other technical data may be obtained by writing the company at Dayton, O.

Speedi-Dri Corp. Formed

The formation of a new company, Speedi-Dri Corp., with main headquarters at 210 W. Washington Sq., Philadelphia, for the marketing of oil and grease absorbents known as "Speedi-Dri" and "Sol-Speedi-Dri" in the New England States, New York, Eastern Pennsylvania and part of New Jersey was announced recently. R. H. Hubbell, Jr., is president of the firm, Warren E. Sawyer, vice-president, secretary and treasurer, and R. A. Hogan is sales manager. All sales are being handled by the New York office at One Wall St. Waverly Petroleum Products Co., Philadelphia, continues as distributor in Western Pennsylvania, the South, Middle West, Far West and Southwest.

Textile Chemists Elect

C. Morris Raybold of Erwin Cotton Mills, Cooloomee, N. C., has been chosen as president of the American Association of Textile Chemists and Colorists to succeed Henry F. Herrman of General Dyestuff Corp., New York. Two vice-presidents elected were Arthur W. Etchells of Hellwig Dyeing Corp., Philadelphia, and George O. Lindberg of Monsanto Chemical Co., Boston.

The "solution test" proves another advantage of Wyandotte Kreelon

Lighter color

Guaranteed detergency

Free-flowing flakes or powder

No objectionable odor

Maximum detergency

Because appearance and performance are important factors in your detergent applications, it will pay you to make the "solution test."

Take a sample of *Wyandotte Kreelon** and one or a number of other detergents. Simply dissolve in a given quantity of water. You'll find that most detergents will turn hazy or "muddy." The Kreelon solution, on the other hand, is clear—practically colorless.

Kreelon also dissolves faster and has greater solubility than most other detergents. And it is uniform in *performance* as well as *appearance*. It provides excellent sudsing and soil removal properties, maximum whiteness retention. Kreelon contains a minimum of 40% active agent.

For further information on Wyandotte Kreelon, its properties and applications, just fill in the coupon below and mail it today.

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RAW MATERIAL MARKETS

As of January 3, 1950

PRICE changes were recorded on all fats and oils in recent weeks, as contrasted with their relatively inactive state in preceding weeks. As a group, vegetable oils, including palm, moved higher. The animal fats, with the exception of lard, are currently quoted at prices under those prevailing a little more than a month ago. Government buying in vegetable oils is said to be responsible for advances of those materials.

For the second consecutive month wholesale prices of shortening were reduced by major producers. Wholesale soap prices were also brought down. The cut on household soap products by Procter & Gamble amounted to four percent at the wholesale level, while its shortening prices were reduced five percent on the same basis. Kendall Manufacturing Co., Lawrence, Mass., announced a wholesale reduction of four percent, while Lever Brothers cut soap prices from four to seven percent. Retail soap prices were cut too.

In recent days fats and oil prices have shown strength. Tallow, for example, while still selling for under the price quoted here in the previous issue, fluctuated downward, and then reversed this trend in recent days. Tallow is currently 6¼ cents a pound, one-half cent under the late November figure. Lard, on the other hand, moved up one-half cent to 10½ cents a pound. Copra prices declined about $5 a ton to $182.50, crude, Pacific Coast basis. Coconut oil, following the action of copra prices, dropped from 15 cents in late November to 14 cents on the current quotation. The vegetable oil group moving to higher ground included palm, which is now listed at 10½ cents pound in tank cars, with the 1. c. 1. differential being one cent. Cottonseed in November brought 9½ cents a pound, now sells for 10½ cents. Corn oil at 11¼ cents is up from the late November quotation of 9¾ cents a pound. Similarly, peanut oil is currently bringing 12½ cents a pound, whereas the price during the closing days of November was 10⅝ cents a pound. Soybean oil is now quoted at 10½ cents a pound, which is one cent more than the price shown here approximately six weeks ago.

Some idea of the extent prices of fats and oils have fallen is given in a recent issue of the *Fats and Oils Situation*, published by the U. S. Department of Agriculture. Prices of fats and oils during November, 1949 averaged only slightly more than half of their level in November, 1948, says the *Fats and Oils Situation*. Production of oils and fats from domestic materials was up sharply in 1949, which is reported by the U.S.D.A. to have been the second largest crop year on record. Production of edible fats and oils in September and October was at a record high level. Output of Federally inspected lard reached an all-time high in October with a figure of 158,861,000 pounds, after making a six year record in the previous month with production set at 122,7000,000 pounds. Factory consumption dropped slightly in October, while factory and warehouse stocks increased. Animal fat stocks were reported to be down somewhat, although in September, as a result of early marketing of hogs from the 1949 spring pig crop, production of lard increased to a considerable extent.

Exports of fats and oils were very heavy in September, totaling 139 million pounds, as compared with 42 million pounds for the month in the previous year. The September rate of export was large in comparison with that of most years prior to 1949, but was below the January-August 1949 level of 211 million pounds per month. Total exports in January to September, 1949, were 1,826,000,000 pounds, as against 658 million pounds for a year earlier.

As a sort of sidelight on the oils and fats market, news from Greece indicates that what is believed to be a record crop of 200,000 tons of olive oil was harvested there in 1949. The previous year's crop failure resulted in an output of only 45,000 tons, which resulted in a ban on exports. The last large crop year experienced by Greece was in 1947 when the crop amounted to 140,000 tons. Heavy olive oil production is also reported in Tunisia and Algeria, which are competing with Greece and other Mediterranean countries for the export market. Since Greece normally consumes about 90,000 tons of olive oil, she finds herself with an exportable surplus of nearly 100,000 tons. The United States may import 8,000 tons of edible olive oil, about 50 percent under 1948 figure.

Talk of a reduction in exports of U. S. fats and oils during 1950 is being heard. About three-quarters of Europe's purchases of fats and oils from the U. S. are E.C.A.-financed. There is some question as to Europe's preference for materials from the U. S. other than fats and oils. If European countries decide they want materials other than fats and oils, our exports could be cut by an estimated 800,000,000 pounds, which would naturally have a profound effect on the domestic fats and oils market. The lack of interest in U. S. fats and oils would seem to indicate also that the fat and oil situation in Europe and elsewhere is showing considerable improvement.

Palm oil exports from the Federation of Malaya during October amounted to 4,578 tons, as compared with 3,132 tons in the previous month. For the year, the Federation exported a total of 45,254 tons, as compared with 48,176 tons in the first ten months of 1948.

PINE OIL

SMELLS CLEAN... CLEANS

HERCULES POWDER COMPANY 961 Market Street, Wilmington 99, Delaware

BIDS AND AWARDS

Low Floor Wax Bids

Among the low bids on an unspecified quantity of floor wax in a recent opening for miscellaneous supplies by the Bureau of Federal Supply, U. S. Treasury Department, Washington, D. C., were those of: Trio Chemical Works, Brooklyn, 61 cents; Kem Products Corp., Brooklyn, 64 cents; J. A. Tumbler Laboratories, Baltimore, 64 cents; Joseph E. Frankle Co., Philadelphia, 66 cents; Windsor Wax Co., Hoboken, N. J., 69 cents; Ches-White Co., Baltimore, 72 cents; Uncle Sam Chemical Co., New York, 72.49 cents; Buckingham Wax Co., Long Island City, N. Y., 74.9 cents and Twin City Shellac Co., Brooklyn, 75 cents.

Fed. Supply Soap Awards

Awards on soap were announced recently by the Bureau of Federal Supply, Washington, D. C. In an opening of Oct. 31 (Inventory 3W-8200S-R) these awards were announced: Larkin Soap Co., Buffalo, 7.2 cents on item 51-P-250 for all destinations; 250-100, 5.9 cents all destinations. Colgate-Palmolive-Peet Co., Jersey City, N. J., item 51-S-1575, 10.842 cents for Boston, 10.192 cents for New York, 10.982 cents for Cleveland, 10.917 cents for Chicago, 11.052 cents for East Point, Ga., 10.16 cents for Fort Worth, 8.81 cents for Kansas City and 10.34 cents for Denver. Pioneer Soap Co., San Francisco, item 51-S-1575, 11 cents for San Francisco and 12 cents for Los Angeles. Day & Frick, Philadelphia, item 51-S-1550, 4.8 cents for District of Columbia and 7.1 cents for San Francisco. Harley Soap Co., Philadelphia, item 51-S-1716, 6.34 cents for New York, 6.26 cents District of Columbia, 6.82 cents Cleveland, 7.36 cents for Chicago and 8.6 cents for Fort Worth; item 1715-960, 10.1 cents for Denver.

Canal Chip Soap Bids

Bids on chip soap in a recent opening for miscellaneous supplies by the Panama Canal, Washington, D. C., were received from: Kamen Soap Products Co., New York, 7.84 cents; Mount Hood Soap Co., Portland, Ore., 8.8 cents; National Milling & Chemical Co., Philadelphia, 7.51 cents; North Coast Chemical & Soap Works, Seattle, 10.6 cents.

Dishwashing Comp. Awards

Awards on dishwashing compound in a recent opening for miscellaneous supplies by the Veterans Administration, Washington, D. C., went to Economics Laboratory, St. Paul, Minn., on items 1, 2, 4, 5, 7 through 41, 43 through 50, 52 through 55, 59 through 64, 69 through 77, 82 through 85, 89-91, 96, 97, 99, 101, 103, 105 through 112, 114 through 124, 126 through 130, 132 through 138, 140 through 145; Cowles Chemical Co., Cleveland, item 3, 6, 42, 46, 51, 56-58, 65-68, 71, 72, 78, 81, 86; Virginia-Carolina Chemical Corp., Richmond, Va., items 92, 95, 100, 104, 113, 139; Washington Sales Co., Washington, D. C., item 203, 16.5 cents summary bid, 204, 19.5 cents summary bid.

P.O. Wax Bids

Among the bids entered on 6,000 gallons of general purpose wax in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., were those of: Wilbert Products Co., Bronx, N. Y., 62.8 cents a gallon; Ace Chemical Co., New York, 59.5 cents; Kem Products Corp., Brooklyn, 42 cents; Buckingham Wax Co., Long Island City, N. Y., 64.9 cents; R. M. Hollingshead Corp., Camden, N. J., 58 cents; Trio Chemical Works, Brooklyn, 52.5 cents; S. C. Johnson & Son, Racine, Wis., $1.44½; Uncle Sam Chemical Co., Bronx, 50.975 cents; Ches-White Co., Baltimore, 59 cents.

P.O. Scour. Powder Award

Marjo Products Co., Philadelphia, received the award on 81 barrels of floor scouring powder with a bid of 5.82 cents a pound in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.

Fed. Supply Soap Awards

Awards on soap announced in a recent opening for miscellaneous supplies by the Bureau of Federal Supply, Washington, D. C., went to the following: Kamen Soap Products Co., New York, 11.9 cents for Boston, Washington and Cleveland, 12.9 cents for San Francisco, 10.9 cents for Cleveland, Chicago and Kansas City, 11.9 cents for Denver; Swift & Co., Chicago, 12.68 cents for Washington and 13.16 cents for Denver; Conti Products Co., Brooklyn, 50 cents Kansas City, 62 cents for Seattle and Los Angeles; Lab Chemical Co., San Francisco, 9.5 cents for San Francisco; Hershey Estates, Soap Div., Hershey, Pa., 13.44 cents, Boston, 12.86 cents New York, 13.7 cents Chicago, 13.73 cents for Fort Worth.

P.O. Soap Awards

Awards on soap announced recently by the Post Office Department, Washington, D. C., in a recent opening for miscellaneous supplies include that on 60,000 pounds of scouring powder to General Soap Co., Chicago, with a bid of $3.42 cwt. Stevens Soap Corp., Brooklyn, received the award on 12,000 pounds of soap powder with a bid of 3.32 cents per pound. The bid of 2.21 cents of Kamen Soap Products Corp., New York, on 15,000 cakes of grit hand soap received the award in an opening of the Post Office Department, Washington.

VanBuren Cutter to Houchin

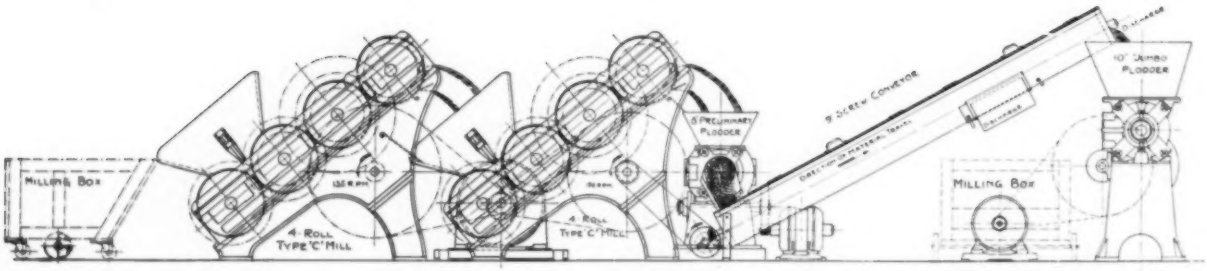
Houchin Machinery Co., Hawthorne, N. J., recently announced acquisition of world wide sales and distribution rights in the soap manufacturing industry for Van Buren soap wrapping and soap cutting machines.

David Goldberg Dies

David Goldberg, district manager of the soap division of Swift & Co., Chicago, in Syracuse, N. Y., died recently of a heart attack.

HERE'S A TYPICAL HOUCHIN INSTALLATION OF MILLS and PLODDERS

--- for the manufacture of fine toilet soaps



Houchin designers and production engineers are able to furnish complete plans for all or any part of a soap making installation.

They know how to combine standard Houchin machines to assure smooth, efficient production of any kind of soap, with guaranteed speeds and volume of production.

The Milling and Plodding department shown consists of:

Two 4 Roll Type C Mills
One 8" Preliminary Plodder
One 10" Finishing Plodder, and
One 9" Screw Conveyor synchronized to give an end production of 1000-1200 lbs. per hour.

We will be glad to plan equipment to take care of your milling and plodding needs, or describe our equipment for all or any part of your soap production plant.

HOUCHIN MACHINERY CO., INC.

Manufacturers of Soap Making Machinery for Over Three-Quarters of a Century

SIXTH AND VAN WINKLE AVENUES **HAWTHORNE, NEW JERSEY**

PRODUCTION SECTION

Evaluating Detergents*

Conditions under which detergents are used must be considered in their evaluation. Factors affecting performance are listed.

THE value of a synthetic detergent is measured in terms of the whole economy of its effectiveness. The proper choice of formulas is based upon simple factors which are related to cost and satisfaction. If satisfaction is always kept at a 100 per cent level, it cancels out, and cost is the only criterion. Generally, the controlling elements of cost in selecting a detergent are: machine time required to do a good cleaning job; man hours; water consumed; heat consumed; and detergent cost.

Mechanical action in a washwheel has a minimum of two important functions to perform. The first is to bring a continuous supply of fresh detergent to the area of soil anchorage. The second is to flex the fabric and manipulate it in relation to its environmental liquor, so that the soil particles will be forced from within the structure of the yarn and fabric.

In the evaluation of a detergent, it is necessary to consider it with respect to the specific system in which it is proposed to be used. However, this does not imply that such evaluation is, therefore, limited to the specific washing formula employed. Quite the contrary. A laundry operator is not interested in abstractions. He is interested almost exclusively in finding that specific or those specific combinations of variables which he can apply to his equipment so that he can handle his wash load at least cost. A reduction in machine time and labor frequently more than offsets an increase in total detergent cost.

If, for example, the fabric which is to be washed is of a very fine construction, such that minute soil particles imbedded therein will be retained tenaciously, regardless of the fact that the anchorage has been destroyed, then the detergent may be called upon to do an entirely different job than would be the case with a fabric of coarse construction, where once the anchorage has been destroyed, soil removal takes place under relatively simple mechanical manipulation. Every laundryman knows this. However, it has not been taken completely into account, in our evaluation of detergents. Because we find detergent A better than detergent B in a laundering operation in a 20-pound machine, does not mean, necessarily, that we will not find a reversal of this relationship in a 200-pound machine. This fact must be accepted thoroughly, recognizing that, in the past, considerable testing of detergents has been unrelated to the specific conditions under which these detergents were to be used. An essential element, therefore, in all detergent evaluation, is to define the conditions under which the detergent will be employed, and to reflect these conditions, insofar as their total effect is concerned, in the laboratory test. Once this is done, it will be more readily possible for the laboratory to compound the many available chemicals on the detergent palette and produce that detergent suited most economically for the job in hand.

Some of the washroom factors which affect the performance of a detergent are as follows:

1. Number of sudsing operations in the complete laundry cycle.
2. Duration of each sudsing operation.
3. Temperature of each cycle.
4. Concentration of detergent.
5. Volume of water in each suds operation.
6. Fabric load.
7. Fabric construction.
8. Fiber analysis of fabric.
9. Sizes and variety of items comprising load.
10. Fabric finish.
11. Frequency of change in direction of wheel rotation.
12. Number and design of lifting fins.
13. Diameter of wheel.
14. Length of wheel.
15. Ratio of diameter to length.
16. Revolutions per minute.
17. Origin of soil.
18. Age of soil.
19. Location of soil on fabric.
20. Degree of penetration of soil in fabric.
21. Water hardness.
22. Number of rinses.
23. Soil removing potential of rinses.

* Based on a paper by H. J. Wollner of American Conditioning House, Boston, before the Fall meeting of the A.O.C.S.

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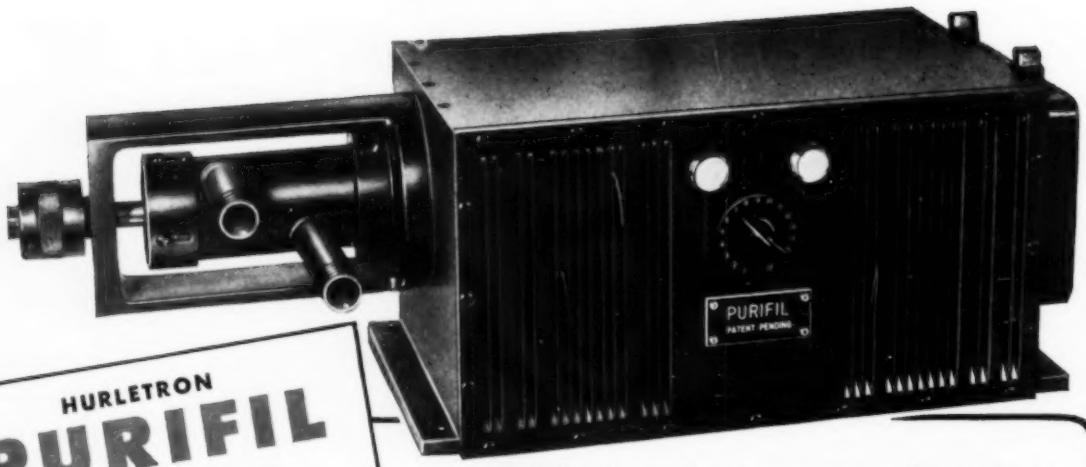

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24. Distribution of washload in wheel.

Two elements must be considered in detergency evaluation. One refers to the capacity of a detergent to break the soil anchorage and prepare the individual particle of soil for release from the fabric. The second element is dynamic in character. It involves manipulating the fabric in such a manner as to promote the release of the free particle of soil so that it is flushed from between the fibers of the yarn. Certain detergents seem to assist in the flushing operation more than others. For convenience, we might refer to this characteristic as the lubricity value of the detergent. Future study may prove that those detergents which reveal relatively high lubricity, as thus defined, derive this characteristic from an entirely unrelated set of physical-chemical attributes. This factor must be determined separately if an appropriate evaluation of the use economy of a detergent is to be established, because the duration of the entire sudsing and rinsing phases of washing will be found to be dependent thereon.

—— • ——

Solubility Mechanism

The solubility of various compounds such as hydrocarbons, dyes, long-chain alcohols, fatty acids, and insoluble soaps, in water, is increased by the addition of soluble soaps and other detergents. This is usually designated solubilization. A number of investigators have studied the solubilization of compounds of varying polarity, size, charge, etc., with quite inconsistent results. An attempt is made to show relationships between these seemingly conflicting data, and to add new data which might increase the validity of these correlations.

Two, or possibly three, types of solubilization occur, which depend on the compound being solubilized. Those systems in which the mole ratio —moles of material being solubilized per mole of solubilizer—increases with increasing soap concentration, are characterized by an increase in long x-ray spacings to the point at which the system becomes saturated with the compound being solubilized. Hydrocarbons such as benzene, ethyl benzene, and normal paraffins fall into this class.

Another type is that in which the mole ratio remains constant above the concentration where the soap assumes its full colloidal properties, and this is characterized by no change in long x-ray spacing. Examples of this type are soap-soap, soap-fatty acid, soap-alcohol, and possibly as a subtype, soap-dye systems. These systems are shown to be mixed micelles in which the solubilized compound is oriented with the long axis of the solubilized compound lying approximately parallel and in the plane of the long axis of the soap molecules, the hydrophylic group of both constituents being toward the water interface. Protein-detergent complexes are discussed from the point of view of solubilization. H. B. Klevens, *J. Am. Oil Chemists' Soc. 26*, 456-60 (1949).

Principles of Detergency

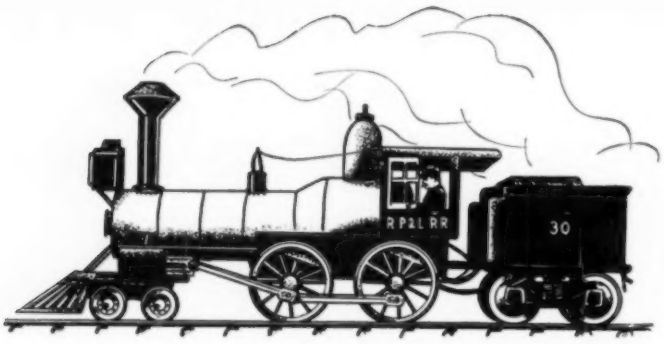
SOLID particles are more difficult to remove than oily and fatty soil. In the case of solid dirt, the smaller the particle size the more difficult is its removal. With oily soils, surface-active products promote droplet formation which is followed by soil removal. In the homologous series of any soap, where the carbon number increases, the optimum wetting action is reached earlier than the optimum washing action. Branches in the paraffin chain shift both optima to a higher carbon number. In this case, the absolute value for the wetting action will be increased. A second hydrophilic group in the detergent reduces both wetting and cleaning action.

The critical micelle concentration of anionic soaps and electroneutral soaps are of interest because numerous soap properties show a break at or near the critical micelle concentration. There is a break in the detergency curve which is in agreement with the critical micelle concentration in those cases where the full detergent power is utilized and where the dirt is not of an extremely small particle size. Of practical interest is the break in the curves of surface activity, foam characteristics, and solubility of oils and calcium soaps at the critical micelle concentration.

In the presence of electrolytes, critical micelle concentration and critical washing concentration are not necessarily the same. Of basic importance in understanding the detergent action of soap and washing alkalies are the interfacial potentials between the soiled surface, the dirt and the aqueous solution. The kind and the degree of these potentials are dependent on the ions of soap aggregates which are adsorbed preferentially by dirt and substratum. The loosening of the dirt from the substratum takes place because the detergent, due to its polar construction, goes between the dirt and the substratum. Electrostatic forces cause the loosening of the dirt and are supported by mechanical movement. In general, the dirt cannot be removed if cationic soaps are used in low concentrations because the surface-active ions produce a positive charge on the dirt. But a cleaning effect with cationic soaps is possible if their concentration is high enough to give the substratum surface a positive charge.

The cleaning activity of neutral or alkaline salts is dependent on the charge of their anions. Salts with multivalent cations decrease the cleaning action, because the preferentially adsorbed cations give a positive charge to the dirt. At high salt concentrations, agglomeration of the dirt takes place and the pH value has a very important influence on the cleaning action. Therefore, cleaning action, when salts are present, is dependent on the amount of salt and the kind and degree of charged ion preferentially adsorbed by the dirt and substratum.

The increase in cleaning action with pure soap solutions below the critical micelle concentration can be explained by the increase in valence of the aggregating soap ions before the critical micelle concentration is reached, and the formation of micelles takes place. E. K. Goette, *J. Colloid Science 4*, 459-84 (1949).



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Autoxidation of Soap Stocks

The conventional petroleum ether method for determination of oxidized acids often furnishes results which accord neither with the quantity of oxygen absorbed nor with the variation of the characteristic numbers. For example the analysis of peanut oil treated for 105 hours with oxygen at 100°C. showed only two per cent of oxidized acids, although the iodine number fell from 85.1 to 43, and the Lea peroxide number rose from 0.9 to 160.

The autoxidation of peanut-oil soap stocks was investigated with industrially prepared samples by analysis of their separated neutral and acid components after exposure to air between 10 and 20°C. during from one to 90 days. In all cases, even if the contact between peanut-oil soap stock and air were increased artificially, the iodine number was hardly changed and the peroxide number at most was 53. All of the components were examined separately at 100°C. during seven-49 hours in an atmosphere of oxygen. The results showed that the oxidation proceeds much quicker with neutral oil and fatty acids than with soaps. Mucilaginous matter and caustic soda in excess have no influence, but ferrous salts have an accelerating effect. Sodium soaps prepared with peanut oil, previously oxidized to a peroxide number above 125, cannot be grained out but give a jelly which retains all of the added salt. R. Quelet, J. Allard, N. Duffaud, and R. Pineau, *Bull. mens. ITERG* (Inst. tech. etudes et recherches corps gras) 3, 73-7 (1949); through *Chem. Abs.*

Soap Micelle Solubilization

At least two loci of solubilization exist in the soap micelle, shown by the independent solubilization of *n*-heptane and *n*-heptanol in the same soap solution. For example, an extremely turbid system is observed when the saturation point of a long-chain alcohol in a soap solution is exceeded. Addition of a hydrocarbon to this emulsion results in an enhancement of solubility of the alcohol, as shown by a marked decrease in turbidity until a transparent system results. On further hydrocarbon addition, a turbid emulsion is again formed, which is a gel at room temperature. As much as eight to ten times the normal solubilization of *n*-heptanole in soap solution is possible in the combination of heptanol and *n*-tetradecanoate, where the initial alcohol concentration exceeds its solubility in the soap solution. H. B. Klevens, *J. Chem. Physics* 17, 1004 (1949).

Fatty Acids in Soaps

Contrary to expectation, a tenfold dilution of the buffer system oleic acid-sodium oleate-water at 0.1 normal concentration increases the pH. This, and the titration curves of soap solutions, suggest the existence of dimeric ions or molecules. More dilute solutions conform to theory and are used for the determination of the solubility of the acid. Data for oleic, palmitic, lauric, and abietic acid are given. J. P. Wolff, *Oleagineaux* 4, 141-4 (1949).

Hydrolyzing Fats

In a continuous countercurrent process for hydrolyzing fats, water is dissolved in the fat during preheating and before the countercurrent reaction step. A substantial amount of steam is introduced while maintaining the fat under sufficient pressure to cause the steam to condense. N. G. Robisch, to The Procter & Gamble Co. of Canada, Ltd. Canadian Patent No. 459,147.

Nylon Scouring Detergent

Nylon woven fabrics are normally scoured with a detergent such as an alkyl sulfate and/or soap, plus an alkali such as trisodium phosphate. A typical scouring formula is as follows:

	Per cent
Soap	2
Duponol Paste	2
Trisodium phosphate	2

Percentages are based on the weight of goods. The ratio of bath to goods is 20:1 to 30:1. Scouring is for an hour at a temperature as near the boil as possible. For badly soiled fabrics, the concentration of agents is increased. Graphite, certain types of greases, and other contaminants may be difficult to remove. Pretreating with hot concentrated soap solution and allowing the goods to stand for three to four hours in a roll is an aid in the subsequent boil-off operation. *Rayon & Syn. Textiles* 30, No. 9, 114 (1949).

Soap Micrograph Studies

Electron microscope studies were made of the palmitates of lithium, sodium, potassium, rubidium, and caesium, and of sodium laurate, stearate, and oleate. The soaps have distinct micrographs which may be used to characterize them quickly. For the alkali palmitates, lithium, sodium, and potassium may be differentiated by the mounds of curd-like material from which linear networks of interlaced fibers grow, rubidium by the presence of terraced mounds of eccentric shape, and caesium by agglomerated masses from which long thin fibers grow. The saturated sodium soaps are characterized by linear fibers arranged in bundles, while sodium oleate fibers are arranged at random. Electron micrographs of commercial toilet, washing, and shaving soaps could be identified in terms of the pure soaps present, by certain micellar groupings. G. S. Hattiangdi and M. Swerdlow, *J. Research Natl. Bur. Standards 42,* 343-60 (1949); through Chem. Abs.

Horse Fat Composition

Horse fats contain a high proportion of octadecadienoic and octadecatrienoic acids, which are of the seed-fat type. They are extremely low in stearic acid as compared with palmitic acid and hexadecanoic acid. While horse bone and kidney fats differ, they are both close to vegetable oils in acid components, such as olive and peanut oils. They are good raw materials for soapmaking. *Svensk Kem. Tid.* 61, 89-97 (1949); through *Chem. Abs.*

Extra C-P-P Dividend

An extra dividend of $1 on the common stock, payable Dec. 23 to stock holders of record Dec. 19 was declared recently by Colgate-Palmolive-Peet Co., Jersey City, N. J. This brings the total for the year to $3, as the company also pays 50 cents quarterly. A similar payment was made in 1948.

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U.S.I. CHEMICAL NEWS

January ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1950

Nutrition Expert Gives Recent APF Developments

Ingredients of animal and marine origin can be partially replaced by commercial APF supplements in animal feeds, stated Dr. H. R. Bird of the U. S. Department of Agriculture at a recent midwestern animal nutrition conference. Speaking conservatively he advised that high energy broiler rations should contain a minimum of 4% fish meal or 8% meat meal; starter or breeder mash may contain as low as 2% fish meal or 4% meat meal provided an APF supplement is used to furnish the rest of the essential APF complex. Dr. Bird mentioned that there is evidence of at least two additional factors, other than vitamin B_{12}, which go to make up the important animal protein factor.

Practical experiments with U.S.I. Animal Protein Factor Supplement have shown improved growth with this primary fermentation product as compared with B_{12} concentrates mixed in the feed. There is evidence that along with guaranteed amounts of vitamin B_{12}, U.S.I.'s APF Supplement contains appreciable amounts of unidentified factors that are essential for optimum growth.

Chemicals Used to Prevent Formation of Histamine

A new approach to the allergy problem is being taken in research with certain chemicals related to vitamin P — *d*-catechin and epicatechin. These chemicals help *prevent* histamine formation in the body, rather than interfering with its effects, as do the currently used antihistamines.

Boating Enthusiasts Find Solox Ideal for Many Marine Uses

U.S.I. Proprietary Alcohol Solvent Is Used for Fueling Yacht Stoves, Thinning and Removing Shellac, Cleaning Glass

Among yacht-owners and others who are mariners by avocation, U.S.I.'s proprietary alcohol solvent, Solox, has rapidly acquired a reputation for being an extremely versatile product for marine use. Solox burns with a clean, colorless flame, without odor, and leaves no residue. These properties, plus its convenient packaging — in easy-to-store, easy-to-pour gallon, quart, and pint containers, as well as the conventional 54 gallon and 5 gallon drums — make Solox tops for use as fuel in marine stoves.

Maintenance of protective coatings has always been a problem for the boat-owner. The superior solvent action and mild, non-residual

odor of Solox have made it a favorite for cutting and thinning spirit varnish and shellac, for softening undercoatings before sanding and revarnishing, and for cleaning and softening brushes.

Solox is also an effective general-purpose cleaner for use aboard ship. Used in combination with soap it dissolves difficult stains and removes most kinds of dirt and grease. A mixture of one-third Solox and two-thirds water rapidly softens dirt, fly specks, and oil spots on glass, leaving a clean, brilliant surface. Solox also removes dirt, oil, and water from metal surfaces and helps prevent corrosion.

Many Applications in Other Fields

Because of its general utility characteristics, Solox is also used in preference to completely denatured alcohol in a number of products and processes outside of the marine field. Lacquer manufacturers have found that 20 per cent Solox with 80 per cent toluol is

MORE

Inexpensive Polio Vaccine May Come from New Method

A comparatively inexpensive process for producing a vaccine against poliomyelitis may result from a newly developed method of growing the virus on adult human tissue, in test-tubes. Previously the only known medium for culturing the virus in test-tubes was human embryonic tissue. With the new method it may prove possible to transplant the virus from the adult tissue to hens' eggs, as has been done in the past in cultivating other disease-causing viruses. Such a development might permit production of a polio vaccine in relatively large quantities.

How to Reduce Fire Hazard

A new informative 12-page booklet, available now without charge, is designed to help industry reduce fire hazards and losses. The subject of flammable liquids particularly is covered in several sections of the booklet.

Photo by Jack F. Laws

Air view of the Carthage Hydrocol, Inc., Stanolind Oil and Gas Company, and U.S.I. projects at Brownsville, Texas. On the right is the Carthage synthesis plant where natural gas will be converted to synthetic gasoline, other petroleum products, and crude chemicals. The chemicals will be recovered and refined in the Stanolind plant, center background, and then will be prepared for market by U.S.I., whose facilities are shown on the left. Early operation of the facilities pictured above is anticipated.

New Germicidal Powder Emits Its Own Light

Tests of a new medical powder, for use in both wet and dry dressings, have shown its unusual germicidal action. The new germicide, said to emit light in the ultraviolet range, was used on 22 cases of infected wounds, 20 of which had not responded to sulfa and other treatments. All the patients recovered. The powder is reported to contain chloramine T, potassium iodide, dextrose, and sodium biphosphate, and has a pH just over 7 in solution at room temperature.

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January ★ **U.S.I. CHEMICAL NEWS** ★ 1950

Plastic Bags Aid Mixing Of Ingredients That Stain

A plastic-film bag which can be filled with a specified amount of an ingredient and then placed right in the mixing batch of certain types of products during their manufacture has been developed. The bag, which disintegrates in the mix, is designed for use with ingredients that cannot be handled without staining equipment.

'Urethan' without the 'e'

Urethan, an important ingredient in a number of pharmaceutical preparations and a raw material in the synthesis of many drugs and chemicals will be spelled without a final "e" in the *U. S. Pharmacopoeia XIV*. In making this announcement, the Committee of Revision added that the old spelling, "urethane," will be carried as a synonym to the title. U.S.I. is a major producer of Urethan, U.S.P.

CONTINUED

Solox For Marine Use

one of the most powerful solvent combinations for ethyl cellulose. This mixture gives low viscosity solutions and superior final films. A mixture of Solox and ethylene dichloride is a popular solvent for cellulose acetatebutyrate lacquers, and Solox in combination with toluol may be used as a diluent to replace denatured alcohol in cellulose acetate lacquer formulations.

Used in Chemical Manufacture

Solox is employed in various chemical purifying and recrystallizing operations. Anhydrous Solox is often used as a reaction medium for chemical processes which will not go forward in the presence of water. Solox can also be used to furnish the ethyl group in chemical manufacturing processes where its denaturants are compatible with the other reactants.

Other applications for Solox include its use as an ingredient in airplane carburetor and propeller de-icing; for removing water and sludge from fuel oil tanks; for rinsing photographic negatives and prints, and cleaning ferrotype plates; and as an ingredient in the production of paint removers, liquid cements, polishes, and water-proofing materials.

Ethyl Ether Helps Start Diesels in Cold Weather

Recent tests in this country, Britain, and Germany are claimed to have demonstrated that the use of ethyl ether as a priming agent is the most effective and potentially the most convenient method of starting diesel engines in cold weather. Diesel engine cold starting is said not to respond significantly to improvements in fuel cetane numbers, regardless of

the use of ignition accelerators. Although starting accessories like glow plugs and jacket heaters may be satisfactory for some applications, they are sometimes unreliable, inconvenient, and expensive.

New Chemical Process For Polishing Metals

Metal products can now be given a bright, reflective surface without the need of mechanical or electrical operations, it is reported. In the new process the product is merely dipped into a chemical solution and when withdrawn a few minutes later is described as having a high, mirror-like luster. Chief advantage claimed for the new process in production is its simplicity — it may eliminate from one to four or five production steps in the finishing of a metallic product. Metals that can be polished successfully by the new process are said to include brass, copper, Monel, nickel, and aluminum.

TECHNICAL DEVELOPMENTS

Further information regarding the manufacturers of these items may be obtained by writing U.S.I.

Fast, cold-removal of paint, varnish, lacquer, synthetic enamel, and japan finishes, without chemical after-wash, is claimed possible with a new paint remover, described as fire- and explosion-resistant, harmless to fabrics and polished metals, and non-irritating to the hands. **(No. 529)**

A new finishing treatment for polyethylene fabrics pre-shrinks them to less than 2% residual shrinkage at temperatures up to 165°F., it is claimed. **(No. 530)**

To speed up emptying of tank cars and to permit many viscous materials to be handled in cars not fitted with steam coils, new immersion-type steam heaters are on the market. The heaters can be handled safely by one man, the makers state. **(No. 531)**

A new flame-retardant chemical for cotton and rayon does not change the appearance or feel of these materials, it is claimed. Durable to drycleaning, normal home laundering, and weathering, it reportedly reacts chemically with the fabric fibers rather than merely coating their surfaces. **(No. 532)**

Rubbers with high resistance to heat, oil, light, ozone, discoloration, and gas diffusion, and which retain flexibility and elasticity under compression are said to be available. They are reported based on acrylic esters and, though saturated, to be vulcanizable. **(No. 533)**

Cars or trucks stuck in snow, ice, mud, or sand can be easily driven out of difficulty using a new inexpensive device, it is reported. The device is said to provide a non-slip tread that does not cut or otherwise damage tires. It can be stored conveniently in the car, the makers state. **(No. 534)**

An all nylon typing ribbon, claimed to produce exceptionally sharp, clear impressions and to be extremely durable, is now on the market. **(No. 535)**

A new low-cost adhesive for labeling glass bottles and jars, described as resistant to temperature and humidity extremes, is said to do a good job on wet, stippled, or slightly greasy containers, to be fast-setting, and to have ability to run continuously without building up on labeling machines. **(No. 536)**

A new, odorless, one coat flat oil paint permits interior painting without opening windows for ventilation, comfortable occupation of rooms during and after painting, and increased application efficiency, according to the manufacturers. **(No. 537)**

New "ductile" cast iron that is not brittle but can be bent or twisted is reported available now for many and varied uses. It has several times greater strength than ordinary cast iron and greatly increased ductility and shock-resistance, the makers claim. **(No. 538)**

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*Arofene—pure phenolics
*Arochem—modified types
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PRODUCTION CLINIC

By E. G. THOMSSEN, Ph.D.

IN the decade just completed, emphasis was put on volume of production. As supply has now largely caught up with demand, business during the year ahead of us,—and probably all through the nineteen fifties—will be more competitive. Those concerns most alert to the new conditions and which produce their products most economically are the ones that will progress most. The stress this New Year is not so much on *volume* of production as on *cost* of manufacture. Prudent production men are subjecting production costs to very close scrutiny and devising ways to reduce them so as to protect overall profits. Some of the procedures of reducing production costs that have come to our attention recently should be of interest. Reductions are most easily achieved, even in the smallest plants, where an accurate cost system is maintained. It is surprising how many companies neglect costing, especially at this time when the expense of doing business is constantly mounting.

Plant men can hardly be expected to concern themselves with the whole cost system. Too often they look at items they consider a waste of money such as advertising, sales costs and office expenses. It is better for them to searchlight attention on inventories, indirect labor, layout of the plant, improved machinery, factory personnel, planned production, maintenance, storage and shipping, and wage incentives.

We need hardly call attention to what happens to profits when capital is tied up in inventories, especially before a drastic price-break. Soapers and sanitary chemical manufacturers have recently experienced this ordeal. Unless a close control is kept on inventories of raw materials and finished goods, costs cannot be stabilized. It is necessary to know just what quantities are required and at what time. Records of past production in normal times are very helpful in maintaining balanced inventories. Close cooperation between executives, sales, purchasing and plant men is preferable to putting the re-

DR. THOMSSEN

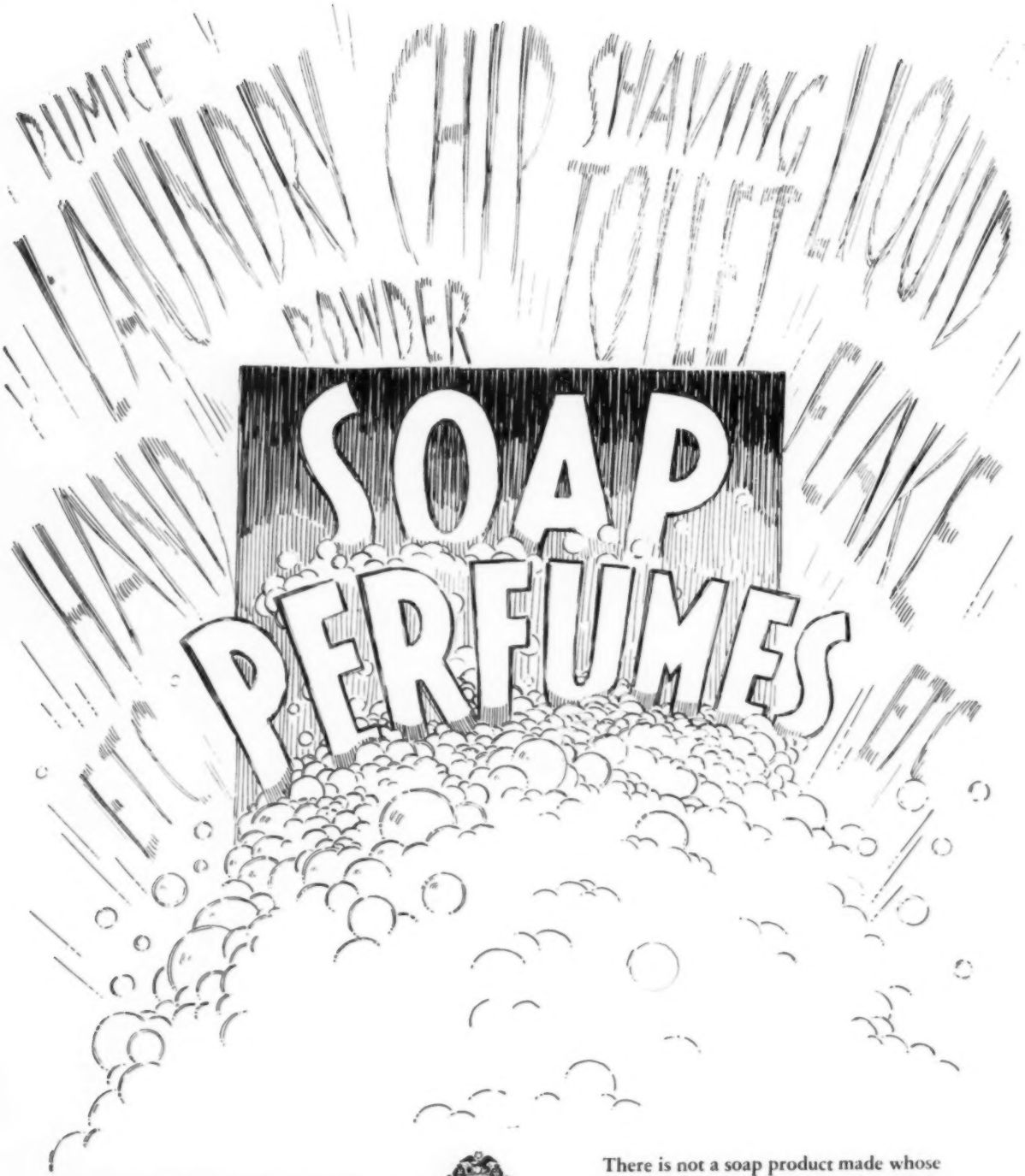
sponsibilities of purchasing upon the shoulders of one individual, and results in drastic cuts in inventories and in more accurate predictions as to market trends. Profits are most easily realized by purchasing when market conditions favor the buyer.

Material and direct labor are the two main items in the cost of any product. Indirect labor, however, is an item that is lost sight of entirely too frequently. When business slows up, direct labor is reduced radically but indirect labor too often is kept on the job. Workmen in this category have the habit of making work for themselves when they sense a lay-off coming. In the past, company executives also have assumed a sort of paternal attitude toward such employees. A good policy, that up-to-date production men carry out, is to reduce indirect labor even in lush times. When a slack-off in business occurs, this phase of production costs has already been well trimmed so that the number of lay-offs is correspondingly lower. It is quite remarkable how many unnecessary jobs pile up when business is good. The idea becomes prevalent that excess profits taxes reduce these overhead labor costs. Such is not the case when business volume shrinks. Production men should watch nonproductive labor at all times and keep it at a minimum. In slack periods, they should seek out and eliminate entirely the "made" work type of job.

We have discussed the problem of plant layouts upon several occasions. When business is rushing, a few cents added to the per unit cost figure by inefficient manufacturing steps or costly handling of raw and finished materials are not considered too significant. When products must be gotten out at competitive prices, the savings on one or two persons' wages on a certain operation looms larger. Numerous cases are on record in which a rearrangement of machinery and equipment has resulted in substantial labor saving. Too often, production men feel that they are operating with the most efficient plant layout. Sometimes it is necessary for them to have an outsider disabuse this notion. It is not a reflection upon any man's ability for another, who has had more opportunities to study better methods of operation, to suggest plant layout improvements. Up-to-date production men constantly seek to follow improved plant layouts to economize on labor and material handling costs.

Besides economies effected through improved plant layout are savings on labor costs by introducing modern, labor-saving equipment to replace slower methods. Even though automatic equipment is already available, emphasis must be put on the fact that such machinery is being improved constantly. It is very wise policy to call in engineers of two or three rival builders of such equipment to obtain their suggestions for further improvements. Such a course requires very little effort or money and has resulted in better and more rapid production, even though it was assumed labor saving machinery already installed was operating economically.

Too many plants operate upon a day-to-day production basis. It is not uncommon in smaller plants, particularly, to find products being made up on an order-to-order basis. No stock whatsoever of finished goods is carried.



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There is not a soap product made whose sales will not respond to the subtle persuasion of a discreetly chosen fragrance. If you feel there is a lack of this powerful sales ingredient in any of your present products, it might well pay you to let our laboratory specialists venture a suggestion or two toward its improvement. And, of course, you will not be obligated unless you can see real possibility of benefit in our recommendations.

As orders come in, the products are manufactured. For private label products this may be necessary, but for trade-marked lines it is very wasteful. In other cases, a haphazard sort of production plan is pursued. Almost any item, especially in lines composed of a number of products, is turned out to keep the help busy. When companies are large enough, a plant's production program may be scheduled as far as six months ahead. When a plant superintendent knows well in advance how much of what he is to make up, he can more easily plan his month-to-month, week-to-week and day-to-day production.

Planned and balanced production results in keeping labor constantly busy, makes possible closer adherence to promised delivery dates, and results in more stable employment which keeps the workmen happier. Finally, such production results in lower production costs.

Factory maintenance may be quite an expense. If buildings, equipment and machinery are not kept in good shape at all times, poor working conditions result in labor inefficiency or loss of time due to breakdowns. Mechanical labor is excessively high and in unionized plants it is not always possible to shift ordinary workmen to such jobs as steamfitting, carpentry, painting or machine work. Maintenance costs must be watched carefully. It is good policy to keep accurate records of machinery performance in order to ascertain more readily the reasons for breakdowns and deterioration. By knowing these, a plant man is better able to prevent trouble before it occurs. Even so simple and important a detail as regular lubrication of machinery may be overlooked and can cause much trouble. Regular, thorough inspection of all equipment prevents many unnecessary breakdowns. In one plant, we observed a blackboard indicating the efficiency percentage of machinery in various departments. In another, we saw recommendations for improved maintenance methods solicited through a suggestion box. Such procedures are constructive. Unless some such method for control of maintenance costs is set up, they become an increasingly large amount as machines and equipment grow older.

An item of cost which confronts many plant men is the handling of materials from and to storage and in shipping. We suggest that handling equipment and proper flow of materials in and out will produce surprising savings.

The insatiable desire of present day workmen for more and more wage increases and other benefits is probably the biggest factor in raising production costs. To meet increased wages production per workman must be raised. Various methods are used. Replacement of hand work or slow automatic machines by newer, more efficient machines has already been mentioned. The wage incentive plan is another method. Good plans of this type take in plant superintendents or department heads as well as the laboring crews. The urge to more efficient production includes direct profit sharing in direct and indirect labor saved, promotions for initiative, extra pay for production above regular base pay and upgrading of the jobs. Another means used is to make motion studies of certain operations and retrain employees to eliminate lost motion so as to accomplish the work more rapidly and at the same time with less fatigue.

Every item of cost has assumed greater importance even though it may appear inconsequential. On a percentage basis of labor cost to raw material prices, it will surprise many if they will go back ten years and compare with present day figures.

Water Dispersion Stabilizer

MARATHON CORP., of Rothschild, Wis., is currently offering economical, non-fermenting, non-caking, free-flowing powders under the name "Marasperse Dispersants" which aid the dispersion of solids into liquid suspension. The addition of from 0.05 per cent to 3.0 per cent of these (based on solids) will disperse and keep in fluid suspension from 35 to 300 per cent more solids. The dispersants are said to be particularly useful for making water suspensions of wettable powder insecticides and industrial cleaners. Full information is available upon request.

Constant Pressure Lubricator

A WEIGHT loaded lubricator that may be used to deliver a lubricant at constant pressure in any desired quantity has recently been made available by Mixing Equipment Co., Rochester, N. Y. Pressures as high as 150 psi may be applied. This lubricator may be used for lubricated valves, motorized valves, mixers, pumps, motors, engines, line shafting—in fact, for almost any moving metal parts. Better efficiency and longer life are assured by its use.

Wax Booklet

A BOOKLET entitled "Waxes for Polishes and Finishes" issued recently by Cornelius Products Co., New York, is a valuable addition to anyone's library on wax formulations. Another more general booklet issued by Cornelius is entitled "Waxes of All Kinds." Both are available to manufacturers of wax products upon written request.

Misuse of the ABC's

IT is becoming increasingly difficult, even for an expert or a memory genius, to interpret the many abbreviations one confronts daily. In looking at items ACTH, DDT, LLAPF, LE, RFC, etc., etc., one does not know whether they refer to a chemical, a biological, a government agency, a trade organization, an athlete or an individual. If the present disorganized trend of designating new chemicals particularly, by letters of the alphabet continues without some sensible keying arrangement, it is apt to cause considerable future confusion. It is time some orderly designation be given to letters of the alphabet so this new type of chemical nomenclature is made more understandable. Long chemical names are a nuisance to the uninitiated but at least a chemist knows the type of product that is being described. If the present trend continues, neither chemists nor laymen will properly identify what is designated.

Drying Oils

A DRYING oil that may compete with tung oil and linseed oil in the protective coatings industries is

. . . so why buy a mixture of fatty acids to get just the one you need!

Today, you don't have to buy a mixture of fatty acids to get the one you really want. Now, you can select a pure Neo-Fat fatty acid, tailor-made to fit your exact needs. Armour's new chemical plant utilizes the Armour-developed *fractional distillation process* to separate crude fatty acids into their component acids, with a degree of purity never before possible (concentrations of 90% or above). This means that you can now select the specific fatty acid you desire—without taking an equal or greater percentage of other acids which either contribute nothing or are definitely detrimental to your formulation. The adjoining column lists the saturated or pure fatty acids available from The Armour Chemical Division with a typical analysis of each product.

With our new facilities we are also able to control the concentration of any of the saturated fatty acids to provide a blend that will meet your exact specifications. If you are interested in a fatty acid tailored to meet your requirements, send us your specifications for prompt quotation on prices and delivery.

Take the guesswork out of your fatty acid buying . . . always specify Armour Neo-Fats. They're economical because they're tailor-made for your use. Write today for prices and more detailed information.

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FATTY ACIDS

These pure fatty acids are currently available from The Armour Chemical Division:

Typical Analysis

Neo-Fat 7 (Caprylic Acid)

Mean Molecular Weight	145.7
Titer	13.0°C.
Iodine Value (Wijs)	0.8
Neutralization Value	385.0
Color Water White	Odor Characteristic

Typical Composition

Caprylic Acid	90.0%
Caproic Acid	3.0%
Capric Acid	7.0%

Neo-Fat 9 (Capric Acid)

Mean Molecular Weight	173.3
Titer	30.0°C
Iodine Value (Wijs)	1.2
Neutralization Value	323.7
Color White	Odor Characteristic

Typical Composition

Capric Acid	90.0%
Lauric Acid	7.0%
Caprylic Acid	3.0%

Neo-Fat 11 (Lauric Acid)

Mean Molecular Weight	203.0
Titer	37.8°C.
Iodine Value (Wijs)	1.0
Neutralization Value	276.0
Color White	Odor Trace

Typical Composition

Lauric Acid	90.0%
Myristic Acid	9.0%
Unsaturated Acids	1.0%
Capric Acid	trace

Neo-Fat 13 (Myristic Acid)

Mean Molecular Weight	226.0
Titer	37.8°C.
Iodine Value (Wijs)	2.0
Neutralization Value	248.0
Color White	Odor Characteristic

Typical Composition

Myristic Acid	90.0%
Lauric Acid	4.0%
Palmitic Acid	4.0%
Unsaturated Acids	2.0%

Neo-Fat 1-56 (Palmitic Acid)

Mean Molecular Weight	258.0
Titer	56.0°C.
Iodine Value (Wijs)	3.0
Neutralization Value	216.0
Color White	Odor Trace

Typical Composition

Palmitic Acid	90.0%
Oleic Acid	4.0%
Stearic Acid	6.0%

Neo-Fat 1-65 (Stearic Acid)

Mean Molecular Weight	282.5
Titer	67.0°C
Iodine Value (Wijs)	3.0
Neutralization Value	198.0
Color White	Odor Trace

Typical Composition

Stearic Acid	90.0%
Palmitic Acid	6.0%
Oleic Acid	4.0%

To the above will be added commercially pure linoleic and oleic acids when the crystallation unit of our new plant becomes operative around the first of the year.

As the manufacturer of the most complete line of fatty acids and fatty acid derivatives, Armour maintains a large research and development laboratory devoted to answering your technical questions and helping with your production problems. Both our technical personnel and our sales staff are always at your service.

Fatty acids are discussed in a series of technical booklets entitled, "The Chemistry of Fatty Acids", "The Selection and Use of Fatty Acids" and "The Handling, Sampling and Testing of Fatty Acids".

This literature and other technical information is free upon request. On your business letterhead please address, The Armour Chemical Division, 1355 W. 31st Street, Chicago 9, Illinois.

Makita Seed Oil. The tree from which it is obtained grows prolifically in the Fiji Islands and large quantities some day may be produced. Another discovery which may increase the production of linseed oil in this country is a process being perfected at the University of Minnesota for isolating flax fiber. Instead of retting the flax straw with enzymes, the technique consists of a two-step modification of the sulfite pulping process used in paper mills. Strong, long fibers are obtained that are within the price range of cotton. If the process is as successful as contemplated, greater quantities of flax will be grown. This may well affect the linseed or cottonseed oil balance in the future.

ASTM Soap Standards

Copies of the latest compilation of "Standards on Soaps and Other Detergents" are now available, it was announced recently by the American Society for Testing Materials, 1916 Race St., Philadelphia 3. The book has 126 pages, and is available in heavy paper cover to members at $1.35. The publication includes the latest specifications and methods of testing soaps and detergents. Soaps covered include: bar, chip, powdered, salt water, milled and liquid toilet soap, solid soap, etc. Detergents covered are borax, soda ash, caustic soda, sodium bicarbonate, trisodium phosphate. Methods of test include sampling and chemical analysis of soaps, special detergents, sulfonated and sulfated oils, metal cleaning compositions and others.

Marion Mixer Folder

Rapid Machinery Co., Marion, Ia., recently issued a folder on its "Marion Mixer", all-steel elevator, and "Marion Finisher". Several views of the mixer, which ranges in capacity from ½ to two tons, as well as cutaway sketches, illustrate the folder. Specifications, a description of the mixer's action and types of application are covered in the folder. The "Marion Finisher" is also illustrated and described. Specifications and suggested installations of the firm's all-steel elevator are also listed.

Solvay Caustic Soda Chart

Solvay Sales Division of Allied Chemical & Dye Corp., New York, recently issued a new caustic soda safety and instruction chart. The chart is available for persons and firms using or handling caustic soda. Suggestions for the protection of employees, precautions in unloading tank cars, how to handle frozen caustic in tanks and general first aid information are given. This is the third in a series of such charts issued by the company. The two previous ones covered chlorine and caustic potash. Any or all charts are available by writing the company at 40 Rector St., New York 6, N. Y.

New Small Size Dryer

A new, small spray drying unit with a capacity of from five to 25 pounds per hour, depending upon the type of material and operating conditions, was announced recently by Swenson Evaporator Co., division of Whiting Corp., Harvey, Ill. A bulletin on the dryer, which is about nine feet high and seven feet long, is available upon request.

Du Pont Textile Brochure

E. I. du Pont de Nemours & Co., Wilmington, currently is distributing a brochure titled "Research, Key to Textile Progress," which contains information on recent developments in textile chemistry.

Booklet on Pulverizers

A new 50-page booklet on its line of pulverizing and dust collecting equipment was issued recently by Pulverizing Machinery Co., Summit, N. J. Included in the new booklet is a complete description of the various types of "Mikro-Pulverizers" for a wide range of applications. A three-page list of materials to which the equipment is applicable is also included.

Surface Active Agent Data

A technical bulletin detailing solubility, surface tension effects and stability data of three industrial surface active agents is available from Monsanto Chemical Co., St. Louis, the company announced recently. In addition to chemical and physical data, the 10-page booklet contains a number of formulations for insecticides, rodenticides, apple washing, ant control, etc. The company's materials serve as wetting agents or emulsifiers in such formulations. Covered are "Areskap", "Aresket" and "Aresklene".

New Essential Oils Volume

Essential Oils, Volume III, by E. Guenther. Published by D. Van Nostrand Co., New York. 793 pp. Six x 9 inches, cloth binding, price $10.00. Monographs on the individual essential oils of the plant families *Rutaceae* and *Labiatae* make up the third volume of this series on essential oils. Information included in the monographs is as follows: geographical and botanical origins, growing and harvesting of the plant material, methods of distilling and extracting, physicochemical properties of the oil, adulteration and its detection, chemical composition and use. Twenty-one oils of the genues *Citrus*, and eight oils of other genera are included in the oils of the plant family *Rutaceae*. Essential oils of the plant family *Labiatae* include twenty-five groups which are subdivided into more specific classes. References to additional literature append the various sections. Forty-nine illustrations of equipment, plants and processing operations are also included.

New Upressit Machine

Upressit Products Corp., 420 Lexington Ave., New York, recently announced a high-speed fully automatic machine for applying re-seal and tamperproof over-seals. It is claimed the device will cap and seal cans at any rate required by the filling machine, up to a maximum of 500 per hour. Cans from the half-pint to the gallon size can be handled.

New Homogenizer

A stainless steel hand type homogenizer for plant and laboratory use was announced recently by Colloid Equipment Co., 50 Church St., New York. The homogenizer can handle acids and caustics.

1 of these 7 forms of WYANDOTTE CAUSTIC SODA is the right form for you

50% LIQUID
74% LIQUID
SOLID
STANDARD FLAKE
1/4" FLAKE
CRYSTAL
POWDERED FLAKE

No matter what form of Caustic Soda you are using now, there is the chance that you could use another of the seven forms listed above to better advantage.

Transportation, storage and handling costs are important considerations, too. Have you checked the economies of using liquid as opposed to solid caustic soda, or the savings per ton that can be realized in using 74% liquid caustic rather than the 50% concentration? In some instances it may even be to your advantage to use 50% rather than 74% concentration. Our Technical Service staff will be glad to investigate these factors with you.

If you would like to know more about modern procedures for analyzing certain alkali chemicals, write for a free copy of the Wyandotte booklet, "Analysis of Caustic Soda, Soda Ash, Bicarbonate of Soda."

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SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE
CHLORINE • HYDROGEN • DRY ICE
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CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
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AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

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PRODUCTS AND PROCESSES

Improved Shaving Creams

The fats selected for making shaving cream determine the ratio of potash to soda which will give the best consistency. Soap is made by melting the fats and holding at 75°C. with constant agitation while the alkali is run in. When saponification is complete, melted stearic acid or sorbitol syrup is run in, the mass is cooled, perfumed, and run into tubes. About ¼ hour is sufficient for saponification. The mass stiffens near the neutral point but excess stearic acid resoftens it before the final addition of boric, oleic, or myristic acid is made. Addition of perfume with styrax or other fixative is made in different ways; some soapers add the fixative as soon as the mass has cooled, while others wait until the cream has aged. Sodium silicate is used to stabilize cream packed in aluminum tubes. Lather may be made more profuse by adding fatty alcohol sulfates, while cetyl alcohol and glyceryl monostearate make for a closer lather. A few per cent sodium alginate helps stabilize the desirable physical form of the cream against temperature changes. A. G. Arend, *Perfumery & Essen. Oil Record* 40, 327-9 (1949).

Medicated Dentifrice

The prevention of dental decay and the treatment of pyorrhea is substantially enhanced by the use of a tooth powder which is prepared by mixing calcium glycerophosphate, two parts, with animal charcoal, one part, and sodium chloride, two parts. C. S. Dillon, British Patent No. 572,352.

Fat Component Separation

A mixture of fats in less than 50 per cent concentration is dissolved in solvents such as isopropyl acetate, methyl ethyl ketone, or ethyl ether. The solution is chilled rapidly with a minimum of agitation. A precipitate of solid trigylcerides is formed and separated from the solution by filtration. A. H. Stevens, to Emery Ind. Inc. British Patent No. 622,735.

Amido Detergent

About one mole each of caprylamide, formaldehyde, and triethanolamine are heated together in the presence of acids such as acetic or formic. The acetate of this product is a semisolid mass which lathers well and gives a solution of high detergency. Ciba Ltd. Swiss Patent No. 244,508; through *Chem. Abs.*

Fat and Oil Stabilization

Fats and oils are protected against rancidity by the incorporation of thio di-fatty acids and their esters. D. K. O'Leary, to Canadian Industries Ltd. Canadian Patent No. 461,068.

Phenolic Germicide

A phenolic germicide equal to a 1:100 phenol solution in killing power to *Staphylococcus aureus* consists of a 1:1400 phenol solution plus a soluble inorganic oxidizing agent. The amount of the latter is an equivalent molecular weight to each gram molecular weight of phenol. A. J. Salle and H. L. Guest. Canadian Patent No. 461,676.

Ammoniated Tooth Paste

The following is suggested as a working base for experimenting with formulation of this type of dentifrice:

	Per cent
Tricalcium phosphate	26.67
Glycerine	45.40
Water	15.40
Flavor	0.58
Gum tragacanth	0.96
Saccharin	0.10
Nacconol LAL	2.89
Diammonium phosphate powder FF	5.00
Urea, 100 mesh	3.00

Let the gum swell in water at room temperature for a half hour, add glycerine, and mix well. Slowly add all of the tricalcium phosphate to the gum-water-glycerine solution, and mix thoroughly. Add the remaining constituents, with mixing, in the following order: Saccharin, flavor, diammonium phosphate, urea, and Nacconol. After adding Nacconol, mix no longer than necessary to obtain complete distribution. Victor Chemical Co.; through *Drug & Cosmetic Ind.* 65, 575 (1949).

Adsorption of Soap

The adsorption of sodium soaps from aqueous solutions by carbon black was studied. Adsorption of fatty acid and of alkali components follows the Freundlich adsorption equation. The extent of adsorption increases with chain length. Adsorption of fatty acid exceeds that of alkali, the more so the greater the chain length. Excess fatty acid results in increased adsorption of fatty acid, but does not affect adsorption of soap. Excess alkali increases adsorption of alkali but decreases that of fatty acid and of soap. A. S. Weatherburn, G. R. F. Rose, and C. H. Bayley, *Can. J. Research 27F*, 179-93 (1949).

Sulfonate Detergent

Technical stearic acid monohydrazide is condensed with acetonesulfonic acid and the product reduced. The sodium salt is a bright colored powder and gives unusual detergency in aqueous solution. Ciba Ltd. Swiss Patent No. 248,683; through *Chem. Abs.*

Rodenticide

A rodenticide harmless to men and house animals contains 40 per cent of starch, 35 bismuth gallate, 15 of specially selected food wastes, and 10 per cent of talc. Ammonia Nova Soc. anon. Italian Patent No. 427,945; through *Chem. Abs.*

Rapid Hydrogenation

The speed of reaction of hardening fatty acids and their glycerides is increased by atomizing the reactants into a hydrogen atmosphere by means of a rotor, axial turbine pump, and atomizing disk. Nordiske Fabriker De-No-Fa A/S and C. F. Homboe, British Patent No. 620,145.

An Important Announcement by

HOUCHIN MACHINERY CO., INC.

WE TAKE PLEASURE IN ANNOUNCING THAT

HOUCHIN MACHINERY CO., INC.,
has contracted with VAN BUREN MACHINE WORKS
whereby our company has acquired
WORLD WIDE SALES AND DISTRIBUTION RIGHTS, IN THE SOAP MANUFACTURING INDUSTRY, FOR THE CELEBRATED

VAN BUREN AUTOMATIC SOAP WRAPPING and SOAP CUTTING MACHINES

This outstanding equipment has been thoroughly proven through many years of continuous mass soap production by one of the world's largest and best known soap manufacturers, who has, year after year, cut and perfectly wrapped billions of popular brands of soap cakes with batteries of these efficient, fully automatic machines. This is the first time that these wrappers and cutters have ever been released to other soap manufacturers. Therefore, the occasion is one of great importance to the soap making industry.

THESE SUPER EFFICIENT WRAPPERS & CUTTERS ARE FASTER, SMOOTHER, MORE ACCESSIBLE, MORE RELIABLE AND REASONABLY PRICED

HOUCHIN MACHINERY CO., INC., is proud to add these revolutionary precision built Van Buren machines to our own well known line of soap making equipment, which has been manufactured and sold world wide for over *three quarters of a century*. We sincerely believe them to be the finest and most efficient soap wrappers and cutters ever built.

Please write for our "advance descriptive folder"

HOUCHIN MACHINERY CO., INC.

Manufacturers of Soap Making Equipment for over Three Quarters of a Century

HAWTHORNE, NEW JERSEY, U. S. A.

SOAP PLANT OBSERVER

By John W. McCutcheon

THE 22nd Exposition of Chemical Industries, held in New York, recently, was an excellent show and of considerable value to those attending. Such shows can serve as the medium for purchase of new equipment or for the assimilation of new ideas. One of the outstanding features of this year's show was the emphasis on pilot plant equipment, available either for direct purchase or for use on a rental basis. More and more equipment makers are coming to recognize that potential users prefer to have the equipment or process demonstrated in their own plants. By the use of small or pilot plant size machines, engineers quickly can determine their suitability at a small installation cost, and, more important still, with a small outlay for material and labor. To illustrate: Some years ago a new company had a continuous filter which it wished to sell to a certain company for removing solids from treated glycerine lyes. After considerable discussion, it was finally arranged to install the smallest unit for a month's trial run. The machine was to be free of rental charges but all installation costs were to be borne by the user. Although the machine did not have the required capacity for full production, it was large enough to require that a section of a wall be removed in order to bring the equipment into the plant. The installation time cost approximately $1,000. The routine of the department was disrupted with loss of essential production. Materials were spilled, operators were called off their regular jobs to participate in the experimental work. Finally, it was found that the machine would not function as anticipated and was removed at the cost of another $1,000. In all, this experiment probably cost the company $5,000. The supplier was deprived of the use of the machine and possibly $1,000 for the time spent by one of its experts for supervision. Think how much cheaper

this experiment could have been if the same machine were small enough to have been trundled in on a hand truck and operated by one or two expert engineers for three or four days at an expense of $200-$500 and a proportionate rental fee.

Some companies are opposed to the idea of making anything smaller than standard size. One such company outlines its position as follows: "We have a laboratory at our main plant. Send us a drum of your slurry and we will tell you, free of charge, whether or not we can guarantee to do the job. You can send an engineer along with the sample and inspect the operation." The fault with this is that many companies do not wish to reveal exactly what they are doing or how they intend to use a certain piece of equipment. Secondly, the test run at an equipment plant can not cover as much ground for the same expense as those conducted by the source of raw material. Thirdly, many companies are reluctant to obligate themselves in this way by accepting free service. The writer knows of one particular case in which a very fine piece of equipment is being used in only a very limited way in the soap industry because of this stiff-backed attitude.

Not all process equipment lends itself to small pilot plant size. Particularly is this true of many continuous processes where proportioning pumps, safety controls, etc. are necessary. It will lend itself to such operations however as filtering, mixing, grinding, conveying, separating and many other unit processes. At the Chemical Show, for example, Oliver United Filters, Inc. of New York, showed a pilot plant one foot in diameter with two inch face,—Oliver Precoat Filter,—which was available on a loan basis. Filtration Engineers, Inc. of 155 Oraton Street, Newark, N. J. exhibited a vacuum pilot plant filter on a rental purchase plan by which the full rent price is credited against the purchase price of a new machine of standard size. Some companies call such equipment "laboratory size." The purpose is the same. For example, the Charlotte colloid mill, Model H. D. 1, sells for $642. It has a capacity of one to 50 gallons per hour. To a company investigating problems of this nature the outright purchase of such a piece of equipment might be quite economical. Another type of equipment of interest to soapers now that synthetics have become a part of their business, is the Fansteel Laboratory Pilot Plant (Fansteel Metallurgical Corp., North Chicago, Ill. The equipment consists of reaction chamber with acid resistant tantalum bayonet heater, capable of taking steam at 150 lbs. with tantalum reflux condenser and all necessary openings, gauges and calibrations for such operations as sulfonation, chlorination, etc. A feature of the equipment is the use of stadard glass pipe and fittings as obtainable from the Corning Glass Works, Corning, N. Y. The price is $380.00 deliverable from stock.

* * *

STANDARDIZATION of detergent tests has been frequently discussed in this column. (See the March and May 1949 issues.) Those in-

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terested in this subject should note the series of papers given at the recent fall meeting of the American Oil Chemists' Society in Chicago: "The Choice and Application of a Detergency Test Method," by W. K. Griesinger and J. A. Nevison; "Production and Standardization of a Detergent Soil by Jay C. Harris and E. L. Brown; "A Comparison of Two Methods for Testing Detergents" by G. E. Barker and C. R. Kern. This latter compares the method of measuring change in the reflectance of the test cloth against the method of measuring the soil suspension in the wash liquor. These papers are reviewed in the December issue of *Soap and Sanitary Chemicals*.

* * *

IN this space last month we discussed process control with respect to Standard Process Instruction. A brief example was given with diagram of instruction for starting up a single effect glycerine evaporator. From comments received to date, it would appear that the explanation was not too well understood. In the first place, the illustration was a microscopic section of only one part of the operation. Secondly, the example was given not as a general instruction for starting up an evaporator but rather as a specific instruction for starting up a particular evaporator at a particular plant. When we say turn valve E on ¼ to ½ turn it refers specifically to a certain type and size valve located on that equipment. If the engineers replaced valve E with any other size or type of valve, the instructions would have to be changed accordingly. The excerpt was given as an illustration only. All process instructions must be written specifically for each plant and the detail must fit the general quality of the operators employed. The laboratory as an operating department of the plant should also have its process instructions. These are more frequently known as "Analytical Procedure." It is just as important that an analysis always be conducted on identical lines as it is for a process operator to transfer his batch in a definite manner. For example, if the real soap of a sample is determined by extraction with ethyl ether and then suddenly the method is switched to use petroleum ether, the difference may result in considerable confusion in the accounting department. Similarly with other tests. Reading a bleached oil on a 5¼ inch column is not the same as reading it on a one inch column and multiplying by 5¼. In large plants it is also advisable to supply the laboratory with the sections of process instruction dealing with sampling. In this way the laboratory head can be better advised as to production requirements.

Plant control has now been considered from the point of view of raw material receipts, production and analytical control. These are tied together in what is known as "Accounting Control," which will be dealt with next month.

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New Pax Cleansers

"Pax-Lano-Sav", a new heavy duty granulated skin cleanser was announced recently by G. H. Packwood Manufacturing Co., St. Louis. At the same time an ink stain remover, "Pax Hecto Ink Cleansing cream", for hand cleaning was announced by the firm. "Pax-Lano-Sav" is said to contain lanolin and other skin conditioners. It is claimed to lather well in hot or cold, hard or soft water. The new ink remover also contains lanolin and is said to be odorless.

—— ♦ ——

Petroleum Chemicals Book

The Petroleum Chemicals Industry by Richard F. Goldstein. Published by E. & F. N. Spon, Ltd., London. 464 pp., 6 x 9 inches, cloth binding, price $8.85.

This text surveys those fields of industrial organic chemistry in which oil is the most eco mical starting material. It covers the source of materials, chemistry of paraffins, manufacture of olefins and other hydrocarbons, and the manufacture and reaction of principal classes of petroleum chemicals. The various uses of the petroleum fractions are listed throughout the text as the preparation of the particular chemical is described. Some applications of fractions prepared from crude petroleum for other than fuel or lubricating purposes include: solvents which are made for the paint and dry cleaning industry by narrow cuts of petrol; carriers for active poisons in the insecticide field; and textile lubricants for medicinal purposes. Ninety-two tables are included in the text, giving statistical data and practical data on the various compounds. The index is divided into four parts: name index, index of patent numbers, index of German intelligence reports, and the general subject index.

—— ♦ ——

New Car Wash Compound

The introduction of a new powdered compound for washing painted surfaces of cars, trucks, boats, buses and other vehicles was announced recently by Pennsylvania Refining Co., under the name "Penn Drake Car Soap." The product is said to be made of synthetic bases, with a high soap content. Recommended use dilution is one tablespoon per gallon of water. The product is said not to leave streaks or water spots, and does not require wiping or chamoising.

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Detergents and Detergency

Detailed discussion is given of the nature of synthetic detergents, the properties of their solutions, the nature of soil, methods for measuring detergency, and builders for detergents.

The comment was made that for many years the trend was to offer the hardest possible soap bar. Thus milled soap was preferred to framed soap, and many consumers thought that framed soap improved in quality when it had been allowed to dry out and become harder, even though the bars might be warped to a degree which made them less attractive in appearance. The trend in the last few years has been to produce a more readily soluble soap. One method of doing this has been to produce a soap which might be described as intermediate between framed and milled soap, and having a moisture content falling between the range of these two. Other methods include beating air into the bars, incorporating more coconut oil in the fat stock, or introducing very considerable amounts of potash soap. F. D. Snell, *Chemistry and Industry* 1949, 539-45.

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NEW PATENTS

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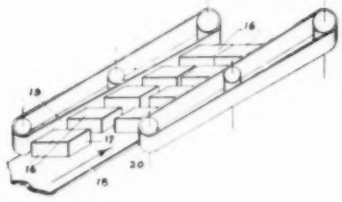
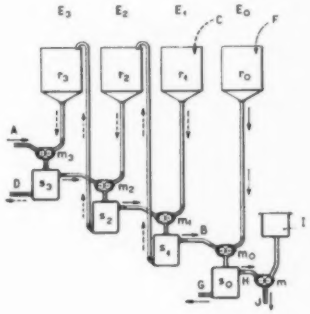
Complete copies of any patents or trade-mark registration reported below may be obtained by sending 50c for each copy desired to Lancaster, Allwine & Rommel.

No. 2,486,213, Process for Making Divisible Soap Bars, patented Oct. 25, 1949 by Albert Lyle Schulerud, Nutley, N. J., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J., a corporation of Delaware. The patent describes a process for making a divisible soap bar, the steps of cutting preformed shape retaining soap bar stock into small sections, said sections having correlated faces where severed, assembling a predetermined number of said sections with said severed faces in intimate contact and peripherally confining each section assembly against outward expansion and exerting full surface pressure on each section assembly in a direction substantially parallel to said interface whereby flow of the soap during said compression is limited to relative opposite displacement of each section at said interface to thereby tightly join said sections together at said interface.



No. 2,485,204, Novel Process for Soap Purifying, patented Oct. 18, 1949 by Felix Lucien Lachampt, Franconville, France, assignor to Union Francaise Commerciale et Industrielle, a society of Morocco. In the manufacture of soap the patent describes a continuous process for the purification of a glycerinated soap obtained in the more concentrated liquid phase known as "neat" soap comprising washing the soap by a continuous circulation with a solution of sodium chloride and the concentration of said solution being close to the concentration below which the soap may be dissolved.



No. 2,483,797, Tall Oil Acid Composition, patented Oct. 4, 1949 by

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At pH7, 10 cc of VERSENE Fe-3 sequesters 167 mg. of ferric iron plus 158 mg. of calcium. At this pH it is nearly 10 times more effective in sequestering trivalent iron than at pH12. Maximum effectiveness on alkaline earth ions is at about pH9 and a further increase in pH has little additional effect.

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Regular VERSENE is an exceptionally versatile product for the Soap Industry. It is chemically known as Ethylene diamine tetra acetic acid tetra sodium salt. Versene does the following things with great effectiveness.

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ANTI-OXIDANT . . . for fats, oils, soaps, fatty acids, and other organic materials. Minute amounts of VERSENE act as a preservative and prevent rancidity.

DISSOLVES GREASE AND FOOD DEPOSITS . . . acts as a buffering agent. Saponifies fats. "Solubilizes" and partly hydrolyzes proteins. Provides two-way cleansing action.

PURIFIES ORGANIC MATERIALS . . . Organic materials contaminated with metals may be purified by the addition of small quantities of VERSENE. The offending metals are complexed and their ion activity reduced. The complex compound may in most cases be easily removed from the organic material thus insuring a higher grade product.

Regular VERSENE is available either as a pale, straw-colored aqueous solution or as a dry, white powder.

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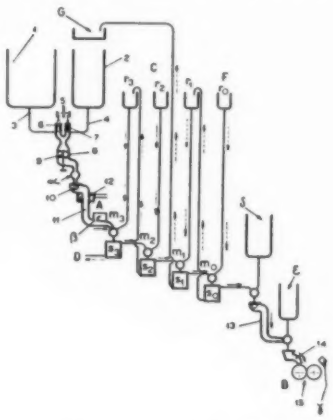
Edward A. Van Valkenburgh, Greene, N. Y. A tall oil acid composition is described containing from about 10 to 90% of the aliphatic amine soaps of tall oil acids and from about 90 to 10% of free tall oil acids, said composition being free from uncombined amine.

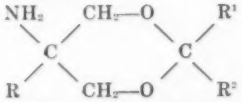
No. 2,485,205, Method for the Continuous Production of Soap, patented Oct. 18, 1949 by Felix Lucien Lachampt, Franconville, France, assignor to Union Francaise Commerciale et Industrielle, a society of Morocco. The patent describes an improved process for the continuous manufacture of soap comprising forming an emulsion of the type "water in oil" between fatty glyceridic materials and an alkaline lye having a concentration of caustic soda to produce soap in the "neat" phase wherein the quantity of soda placed in reaction is slightly above the quantity necessary for a complete saponification of said fatty materials, said emulsion being formed at a temperature slightly above the melting temperature of said fatty materials, then homogening said emulsion to fine particles, conducting said homogenized emulsion continuously through a saponification chamber, starting the saponification at the entrance of said chamber by heating said emulsion momentarily to about 100° C. and then relying upon the exothermic heat developed to complete the reaction to form "neat" soap and then



washing the "neat soap" obtained at the exit from said chamber with a solution formed from a substance taken from a class consisting of sodium chloride and sodium hydroxide solutions and a mixture thereof at a temperature of about 100° C. having a concentration approximating the critical concentration below which the soap may be dissolved whereby glycerine is quickly eliminated from the soap.

No. 2,483,414. Process of Bleaching Fats and Oils and Making Soap Therefrom, patented Oct. 4, 1949 by Lloyd F. Henderson, Reading, and Louis H. Libby, Boston, Mass., assignors of Lever Brothers Company, Cambridge, Mass., a corporation of Maine. A process of making light colored soaps from relatively darker stocks is described, which comprises treating said stock in the presence of a phosphoric compound selected from the group consisting of phosphoric acids and acid phosphates, and a compound liberating nascent oxygen in the presence of said acidic compound under the treating conditions, treating the stock with a bleaching earth, saponifying the stock to form soap, and bleaching the soap.

No. 2,485,987, Aminodioxanes as Insecticides, patented Oct. 25, 1949 by Murray Senkus, Terre Haute, Ind., assignor to Commercial Solvents Corporation, Terre Haute, Ind., a corporation of Maryland. Patented is an insecticidal composition comprising an inert carrier liquid and, as an essential active ingredient, from about 4 to 7 per cent by weight of a 5-amino-1,3-dioxane having the following structural formula:



in which R represents an alkyl group

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of from 1 to 2 carbon atoms, R^1 represents substituents selected from the group consisting of hydrogen and methyl, and R^2 represents a substituent selected from the class consisting of hydrogen, an alkyl group having in excess of 2 carbon atoms, and an alkenyl group.

F.T.C. Soap Hearings

A hearing in the Federal Trade Commission's price discrimination case against three soap companies was held in New York beginning Jan. 3. Lever Brothers Co., New York; Procter & Gamble Co. and its distributing subsidiary, Cincinnati, and Colgate-Palmolive-Peet Co., Jersey City, N. J., have been charged by the F.T.C. with granting rebates to larger purchasers when making changes in the current selling prices of one or more products. The rebates are granted to certain customers on products purchased but not resold before the effective date of the new sales price, according to the F.T.C. The question as to whether promotional allowances granted by the soap companies simultaneously with price cuts produced other than the usual services from a large retailer receiving them was debated at the hearing. One witness, the representative of a New York grocery chain, testified that he had no recollection of whether additional services were performed as a result of a series of promotional rebates, but indicated that special promotional effort was made in moving the affected merchandise. He also stated that inventory records were accepted for the purpose of determining floor stock allowances, rather than by actual count by a manufacturer's representative.

AASPG Publicity to Basford

The appointment of G. M. Basford Co., New York advertising agency, to handle glycerine publicity for the Association of American Soap & Glycerine Producers was announced early this month. The Basford company also handles the glycerine advertising of the A.A.S.G.P. Ames & Norr, New York, previously did the publicity for the association for many years. Discontinuance of "Cleanliness Training and Health," a publication of the Cleanliness Bureau, formerly the Cleanliness Institute, was announced in the December issue.

Emerson Retires from P.&G.

H. Truxton Emerson, secretary of Procter & Gamble Co., Cincinnati, retired from the position as of Jan. 1. He has been with the firm 50 years. Samuel Benedict, with P&G's manufacturing and buying departments for 25 years, succeeds Mr. Emerson as secretary.

P&G Builds in Balto.

A three story packaging plant for household washing powders and other detergents is nearing completion at the Baltimore plant of Procter & Gamble Co., Cincinnati. A spray drying tower is one of the features of the new structure, the cost of which on building permits was put at $240,-$75. The plant is designed to be used interchangeably in packaging soaps or synthetic detergent type washing powders.

Walter E. Lannefeld Dies

Walter E. Lannefeld, retired vice-president of Lever Brothers Co., New York, died Dec. 4 at his home in Arlington, Mass. He was 68 years old and had retired three years ago. He had been with Lever Brothers Co. since 1923, and was appointed vice-president in 1930. In 1902, he joined N. K. Fairbank Co., Chicago soap makers, as a clerk and advanced to the position of operating manager. Mr. Lannefeld became assistant to the president of National Aniline & Chemical Co., New York, in 1919, and four years later assumed a similar position with Lever.

Duveen Speaks on Perfumes

Denis Duveen, president of F. Reinitz Soap Corp., Long Island City, N. Y., was guest speaker at a course on perfuming materials being conducted at New York University's division of general education. Mr. Duveen, who appeared before the class on Dec. 5, discussed the story of perfume during the Renaissance. He is the author of a number of articles on the early history of chemistry. Previously, Dr. Oliver L. Marton, chief chemist of Schulton, Inc., New York, spoke on the subject of "Chemical and Physical Aspects of Toiletries."

Peda Spray to Stop Claims

Peda Spray Co. of Pontiac, Mich., recently agreed to comply with a Federal Trade Commission order that it stop using the official report of a Navy medical officer on tests of its "Peda Spray" solution and "Peda Spray" dispenser in the promotion and sale of these products. According to the F.T.C., the company circulated without authority a Navy report on the company's products for use as preventives and treatment of athlete's foot.

Name Hoffman U. S. Rep.

William A. Hoffman, Inc., New York, was recently appointed exclusive distributor in the United States for essential oils by T. Noirot & Cie of Nancy, France; Faco De Pasquale Fu Santi of Messina, Italy; and J. Hinterseber-J. Wurth, Imst. and Fernpass of Vienna, Austria. The Hoffman organization has Noirot, Pasquale and Hinterseber stock warehoused in the U. S. All merchandise is packed in original containers.

FTC to Rehear "Teel" Case

A rehearing of the Federal Trade Commission's case against Procter & Gamble Co., Cincinnati, for alleged misrepresentation of P & G's liquid dentifirice, "Teel", has been scheduled for Jan. 23 in Washington.

T. C. Sheffield Now a V. P.

T. C. Sheffield, in charge of the West Coast Office of Sheffield Tube Corp., New London, Conn., was recently elected first vice-president of the company. Previously, he was Chicago manager for Sheffield.

Joins Amer. Conditioning

Arthur I. Anderson, for 14 years a member of the staff of the American Institute of Laundering, Joliet, Ill., recently joined American Conditioning House, Inc., Boston, as coordinator of textile and laundry testing and research. He is a 1924 graduate of Lowell Textile Institute.

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A spray made with Klenz-Aire Deodorant Oils kills tobacco smells, cooking odors—destroys odors in public rooms, theatres, kitchens, apartment houses, rest rooms, schools, hospitals, taverns . . . and leaves a pleasant, fresh after-scent that people like.

Your spray, when made with Klenz-Aire Deodorant Oils No. 2, will work in any type of dispenser, including the new self-spraying plastic bottles now so practical and so popular.

We will be glad to send generous samples of Klenz-Aire Deodorant Oils No. 2 for your experimentation; or our chemists will work with you to develop your own finished spray.

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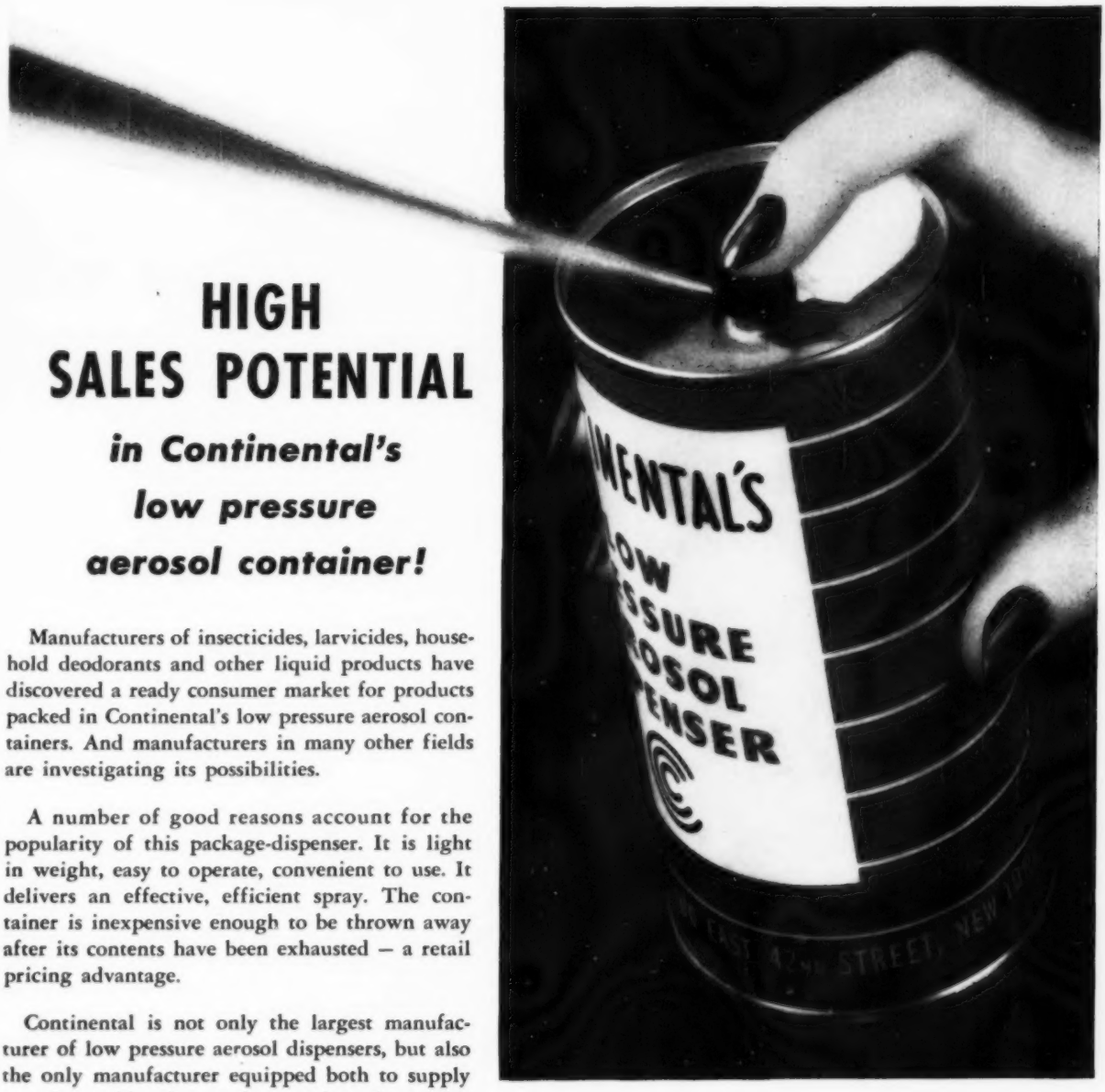

HIGH SALES POTENTIAL

in Continental's low pressure aerosol container!

Manufacturers of insecticides, larvicides, household deodorants and other liquid products have discovered a ready consumer market for products packed in Continental's low pressure aerosol containers. And manufacturers in many other fields are investigating its possibilities.

A number of good reasons account for the popularity of this package-dispenser. It is light in weight, easy to operate, convenient to use. It delivers an effective, efficient spray. The container is inexpensive enough to be thrown away after its contents have been exhausted – a retail pricing advantage.

Continental is not only the largest manufacturer of low pressure aerosol dispensers, but also the only manufacturer equipped both to supply container with valve, or the container alone. This "Finger-tip" valve – an exclusive Continental feature – produces a fine spray, the key to the success of this container.

If you are looking for new packaging methods or merchandising ideas, it will pay you to get in touch with Continental.

You can't beat Continental as a dependable source of supply!

CONTINENTAL CAN COMPANY

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Gentlemen: I would like to have more information about your low pressure aerosol container.

Name .....

Company .....

Address .....

City & State .....

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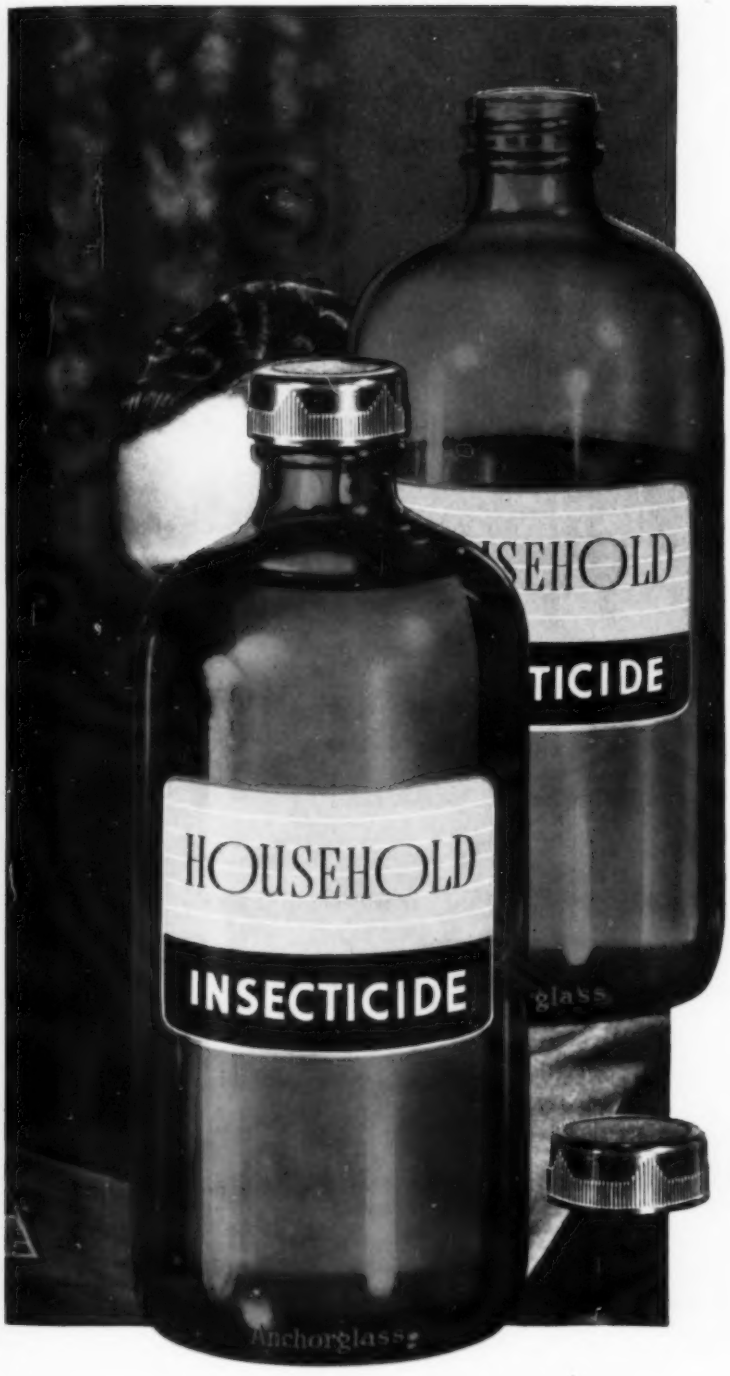
And for Packaging it's GLASS

Nothing is more important in the packaging of your products than the preservation and protection of their purity, strength and other qualities. Inert, the glass package does not change your products. It will not leak, rust nor absorb moisture. Quality and strength are protected. Easy to open, easy to use, easy to reseal to protect unused contents, it makes the most convenient package. The glass package may be transparent or not as required. It lends itself to individuality in size and shape, hence is adaptable to any product. In short, glass makes the ideal package for your products . . . preferred by consumers because it is safe, sanitary and convenient . . . by retailers because of its sales and merchandising advantages. Anchor Hocking Glass Corporation, Lancaster, Ohio.



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Anchorglass Boston Rounds give peak performance on modern, high-speed production lines. Their practical engineered design—consistency in manufacture—uniform distribution of glass—accurate and careful annealing—strict quality control at every step from raw materials to finished product—result in strong, durable, uniform bottles. Whether you bottle pharmaceuticals, health products, household or industrial chemicals, there's an *Anchorglass* Boston Round to meet your requirements —15 sizes in all, ½ oz. to 128 oz. —in crystal, amber or emerald green.

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The *Anchor* Plasticap is distinguished from ordinary styles of molded caps by a patented liner retaining ledge and recess. This patented feature holds the liner permanently captive without the necessity of adhesives which frequently crystallize, release the liner and contaminate the contents. It permits the use of full size liners that completely cover the glass sealing surface. It prevents buckling, wrinkling or creeping of liners which otherwise might cause leakage. It permits the free rotation of liners, thereby preventing injury to them from imperfections in the glass sealing surface. And withal, it is impervious to the action of acids, alkalies and other destructive agents. May we submit container and closure samples and prices?

*Reg. U. S. Pat. Off.

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it's Anchor Hocking

PACK IN "Anchorglass"... SEAL WITH "Anchor Caps"

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A survey of some fifteen thousand establishments shows that only one in eight firms give more than passing attention to sanitation maintenance.

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* *Wrote one advertiser. Name available on request.*

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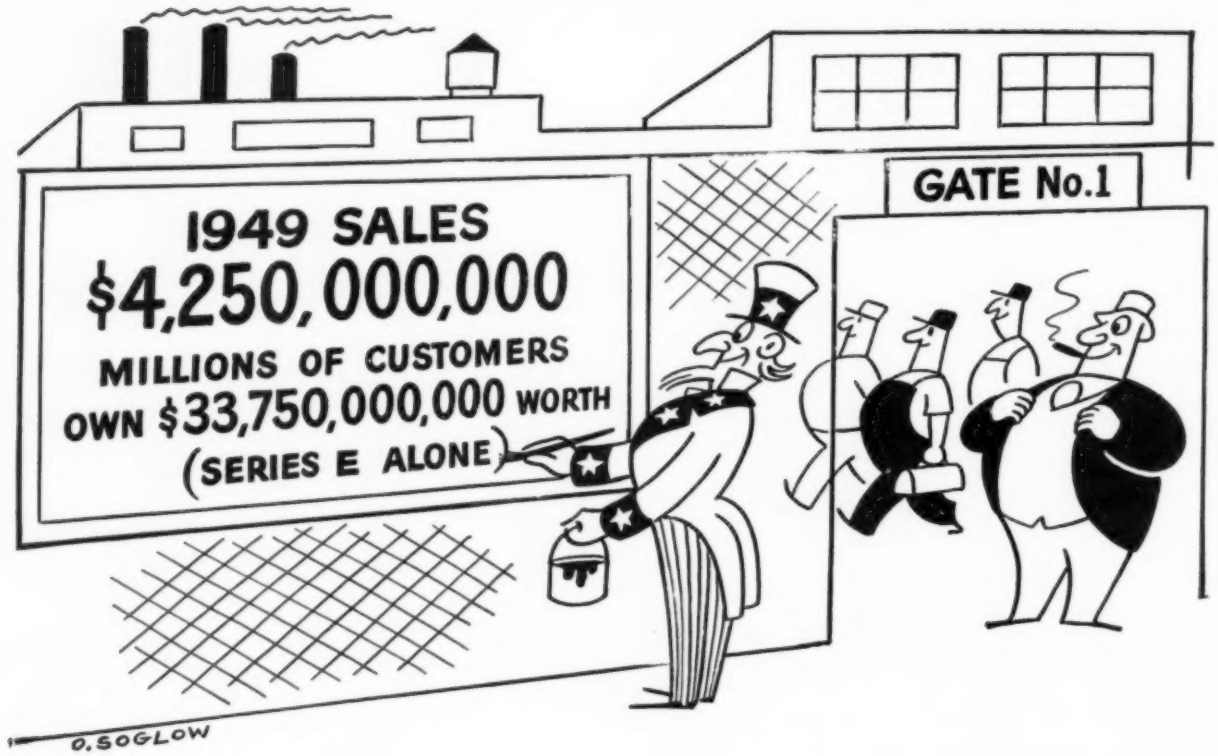

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Direct benefits include decreases in absenteeism, labor turnover, and accidents—with a corresponding increase in production. How come? It's an intangible process *but one that has been demonstrated in more than 20,000 companies operating the plan.* Workers who invest regularly in Savings Bonds—the easy, automatic Payroll Savings way—become better workers. They feel more secure . . . are steadier and more careful in their work.

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For all the help you need, get in touch with your State Director, U. S. Treasury Department, Savings Bonds Division—or write the Savings Bonds Division, Treasury Department, Washington, D. C.

The Treasury Department acknowledges with appreciation the publication of this message by

SOAP and SANITARY CHEMICALS

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Can you give our para blocks a refreshing mint odor to replace the old-time floral odor now used?
Can you furnish a perfume oil for our liquid soap that will dilute without becoming cloudy?
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when it's a problem in neutralizing or perfuming ... count on MM&R for the right answer!

In today's growingly competitive market, more and more manufacturers are re-examining their products with an eye to odor improvement. In their search for ways and means to make their products *smell* better . . . and thus *sell* better . . they have a powerful ally in MAGNUS, MABEE & REYNARD, INC.

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No matter what *your* problem . . no matter what your *budget* . . the facilities of our modern laboratories, the services of our skilled technicians are available to you without obligation. Call on MM&R now and *count* on MM&R for the right answer!

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THIS new 550 page loose-leaf volume is designed for ready reference, contains a list of all law enforcement offices, a chart showing at a glance the basic requirements of each state, and all detailed requirements, — a ready reference volume to guide manufacturers through the ever-growing maze of laws and regulations.

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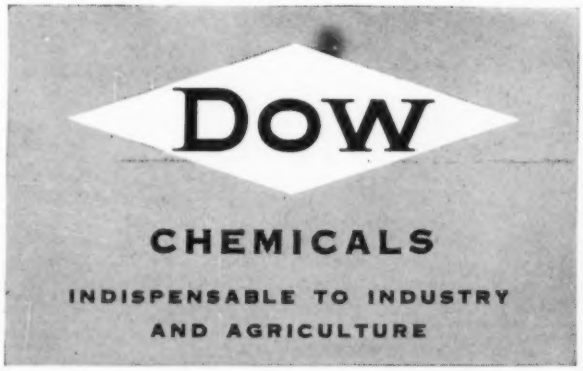

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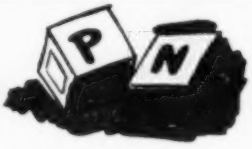

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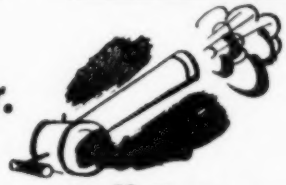

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■ Also please send me information on using pyrethrum in_____

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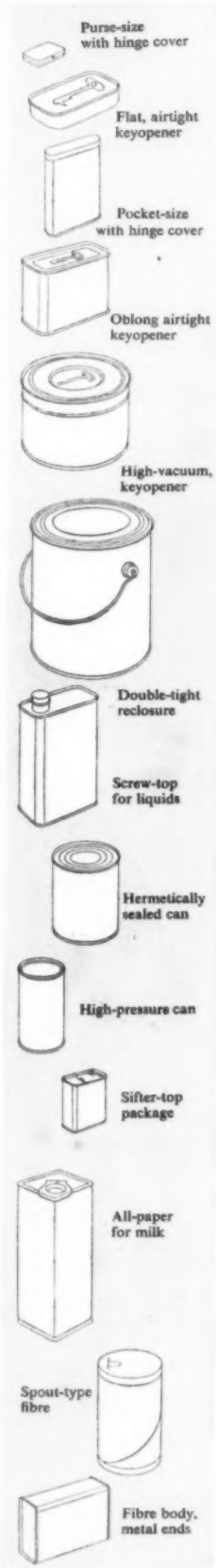
H. W. Hamilton, Secretary



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On this page you see thirteen different types of containers, adaptable to hundreds of different packaging problems and in actual use by scores and scores of different industries.

What you do *not* see here are the many *other* types of containers pioneered and developed by Canco.

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There is hardly a major development in metal and fibre packaging that this keen, alert organization has not pioneered.

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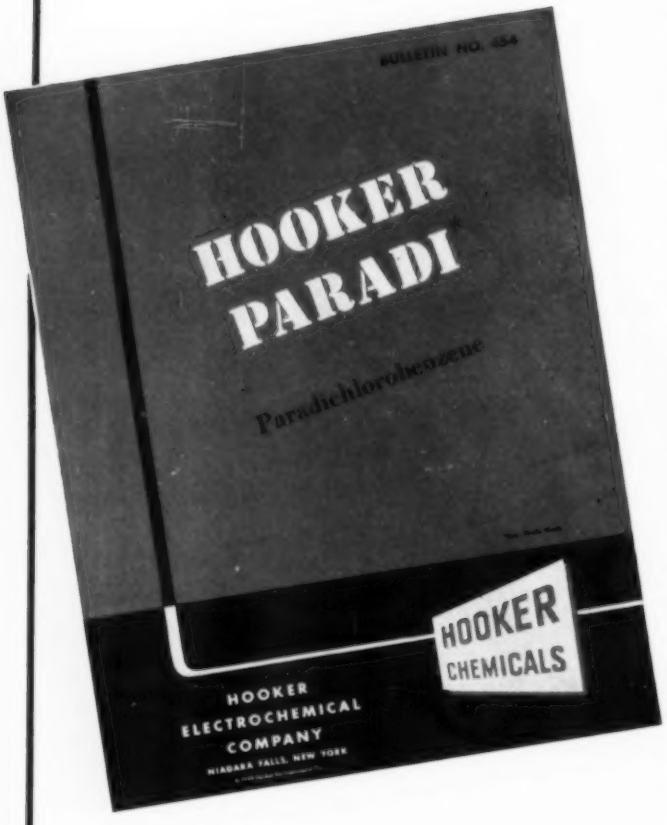

HOOKER's new Bulletin No. 454 on Paradichlorobenzene can be your guide to increased sales and profits if you are interested in the fumigant, deodorant and disinfectant markets. It describes the many uses and application of paradichlorobenzene, methods for reforming and repackaging—contains a table and illustrations of exact screen sizes—just the information a repackager or specialty manufacturer needs.

Hooker Paradichlorobenzene is a crystal clear, high purity product that evaporates completely, leaving no residue and no stains. It is not injurious to fabrics, furs or hides and is not poisonous to human beings.

It is made available in seven graduated sizes from powdered to Pea No. 1 (Screen size through 5/8" on 2½).

TYPICAL PROPERTIES
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Appearance	White to clear transparent
Form	Crystals in 7 sizes
Melting Point	53°C
Boiling Point	173°C
Residue on Sublimation	None
Shipping Containers	25, 50, 100, 200 lb. Fibre Drums

A request on your company letterhead will bring this bulletin to you promptly. Chemists who are interested in other physical and chemical properties should ask for Technical Data Sheet 749.

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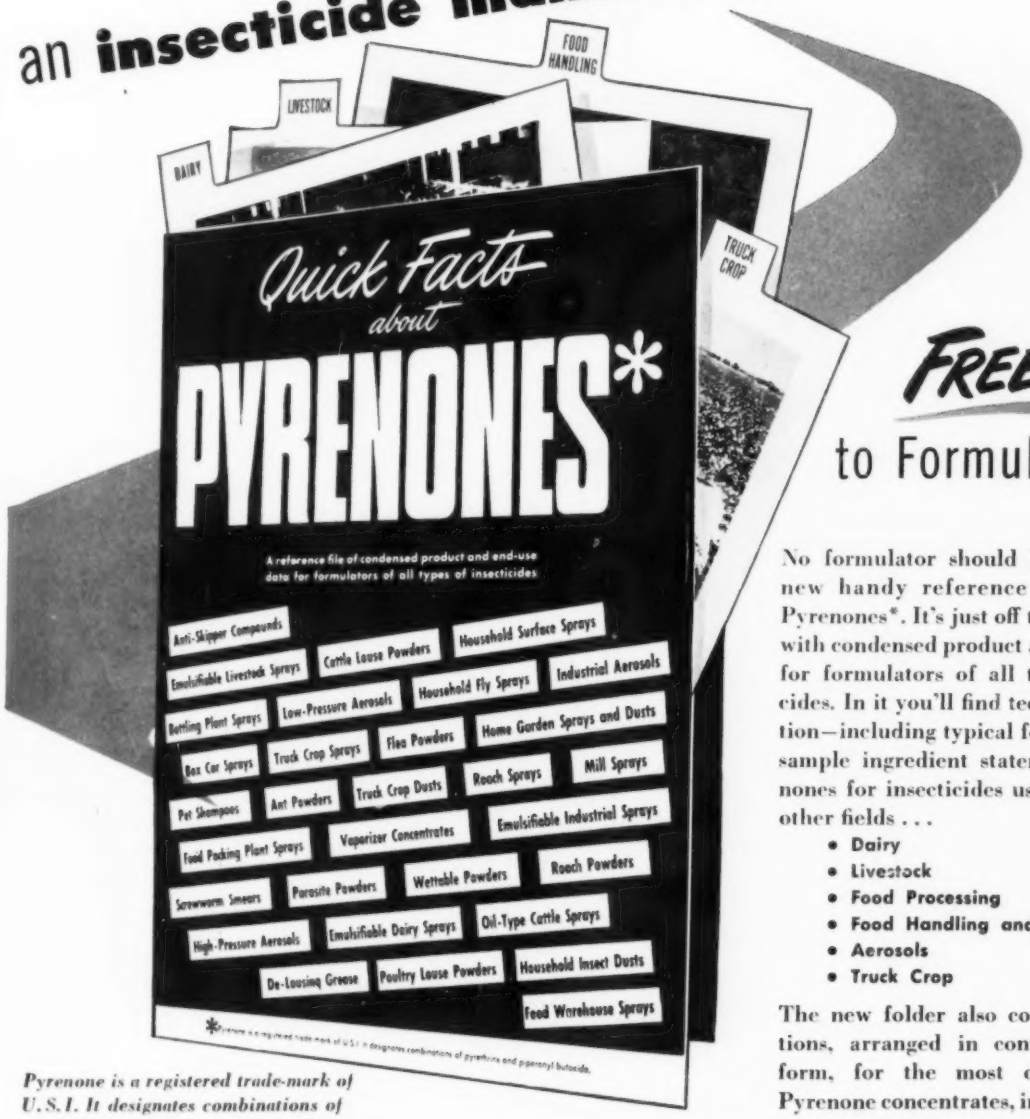

Pyrenone is a registered trade-mark of U. S. I. It designates combinations of pyrethrins and piperonyl butoxide

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No formulator should be without this new handy reference file on U.S.I. Pyrenones*. It's just off the press – filled with condensed product and end-use data for formulators of all types of insecticides. In it you'll find technical information—including typical formulations and sample ingredient statements—on Pyrenones for insecticides used in these and other fields . . .

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This BLUE BOOK is a buying directory for use by manufacturers, converters, repackers, private brand buyers, and janitor and sanitary supply houses.

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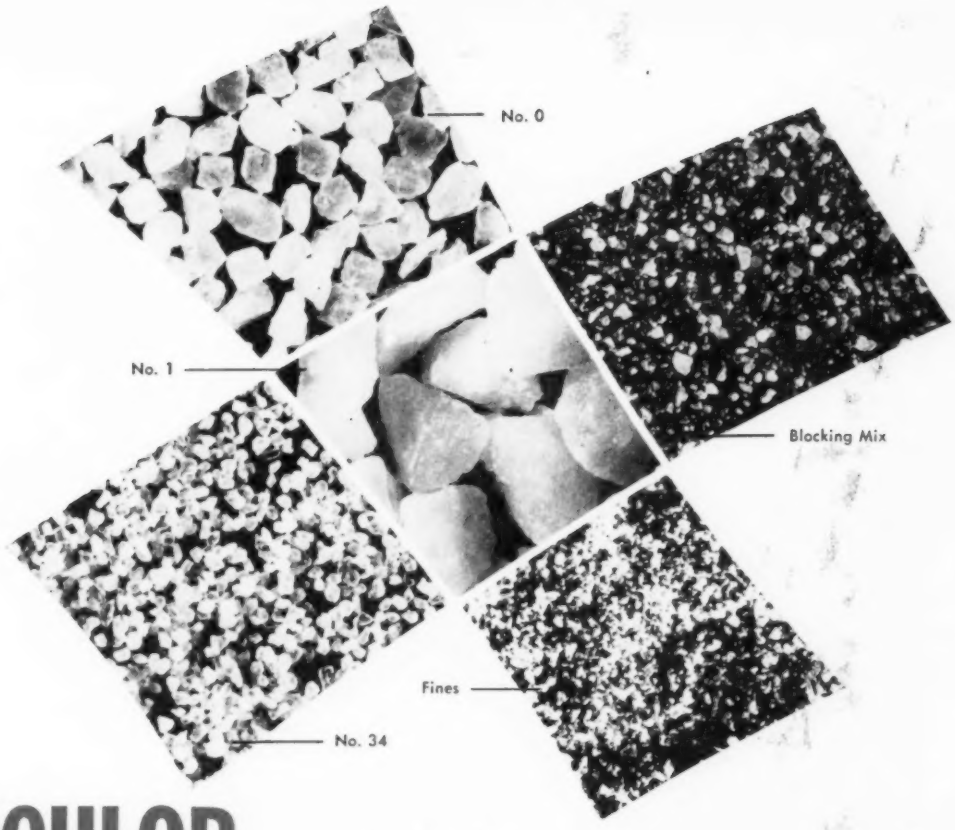

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Santochlor is available in five standard crystal sizes, each produced to fit your special needs, as follows:

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Santochlor is available for immediate shipment, in amounts ranging from 100-pound drums to carloads. For quotations and further technical information, mail the coupon, contact the nearest Monsanto Sales Office or write: MONSANTO CHEMICAL COMPANY, Desk A, Organic Chemicals Division, 1767 South Second Street, St. Louis 4, Missouri. *Santochlor: Reg. U. S. Pat. Off.*

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

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Since 1910 Baird & McGuire, Inc. has specialized in the manufacturing of certified chemical products for the wholesale trade. Today the name "Baird's" is a shining symbol of service and dependability in the sanitary field. There is no substitute for experience and quality—

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Write for Baird's catalog-price list of Certified Products and buy with confidence.

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SANITARY PRODUCTS
A SECTION OF SOAP

SHOULD insecticide manufacturers put their emphasis back on space sprays in their preparations for the 1950 season? Has residual control become so undependable because of the growing development of resistance in our fly population that we are due for a return to the type insecticides sold before DDT swept to the head of the list a few years back? While no one seems prepared as yet to answer either of these questions with an unqualified affirmative, there seems to be much sentiment along these lines to judge from comment at last month's Tampa meeting attended by the country's leading entomologists.

There is no denying that development by insects of resistance to insecticides is one of the toughest problems entomologists ever have faced. And it seems apparent that flies which develop a resistance to one insecticide will in a few more generations start development of resistance to others. The answer, some entomologists apparently feel, is to go back to space sprays, with their high initial knockdown, don't count too heavily on the residual protection which DDT gave in the first few years of its use, and work on shrapnel type formulations which have a little of everything in them, guaranteeing that whatever particular ingredient in the product flies may be resistant to, there will be other toxics present which will assure control.

A wider market for fly larvicides is seen by other observers. With the toughening of the resistance problem, many workers feel that effective control will demand use of such products to kill off the fly population before it is hatched. Whether the answer to the 1950 fly problem is to be larvicides, space sprays, residuals or aerosols, the time for making definite plans for the coming season is upon us.

CONSIDERABLE optimism over prospects for insecticide business in 1950 is being voiced in trade circles. In spite of ever-increasing legislative restrictions at both Federal and State levels, to which attention was amply paid in 1949, household insecticide volume for that year was considered good. Some reported it was even better than that. With the dearth of common insects a few years back no longer evident, and with more residual failures of insecticides against certain insects reported, manufacturers are looking forward hopefully to 1950.

Some units in the industry who seemed to have lost interest in making and selling insecticides during the lean years are again showing a revived liking for the business. New developments in both insecticides and applicators are being perfected for the coming year. With the general income level holding up, manufacturers and suppliers alike feel that 1950 could turn out to be one of the industry's best years.

AT the recent annual meeting of CSMA, the industry was warned against killing the aerosol market. Remembering the early days of DDT, we can well understand this warning and are in full accord with it. Those in the industry who plan to come out with a line of aerosol products this year, should make haste slowly. We urge them to place their faith only in those well-known suppliers who are qualified to fill their needs properly. We urge them to avoid cheap, junky products, and also those who would make a quick dollar by supplying such. There is no room for the fly-by-night. Avoid him and his goods as you would the plague. Remember DDT. Do not let a similar pattern ruin the future of aerosols.

Officers of the Chemical Specialties Manufacturers Association elected at the meeting are, left to right: H. W. Hamilton, H. W. Hamilton Co., New York, secretary; Leonard J. Oppenheimer, West Disinfecting Co., Long Island City, N. Y., president; C. L. Weirich, C. B. Dolge Co., Westport, Conn., first vice-president; Peter C. Reilly, Reilly Tar & Chemical Corp., Tuckahoe, N. Y., treasurer, Melvin Fuld, Fuld Brothers, Inc., Baltimore, second vice-president. Mr. Fuld was chairman of the program committee for the last two meetings of the N.A.I.D.M.

C. S. M. A. Meets, Elects Oppenheimer

LEONARD J. Oppenheimer of West Disinfecting Co., Long Island City, N. Y., was elected president of the Chemical Specialties Manufacturers Association, formerly the National Association of Insecticide and Disinfectant Manufacturers Association, at the 36th annual meeting of the latter organization, held at the Mayflower Hotel, Washington, D. C., Dec. 5 and 6. Registration for the meeting was around 400, one of the largest meetings ever held. Changes in the organizational structure and the adoption of the new name, voted at the mid-year meeting in Chicago in June, 1949, were officially adopted at the Washington meeting, last month. Apart from the adoption of a new name, the principal difference between the Chemical Specialties Manufacturers Association and its predecessor is the establishment of five divisions within the organization and the election of their chairmen to the board of governors of CSMA. The five divisions, each of which has an administrative committee composed of a chairman, vice-chairman and three others, are: aerosol; disinfectants and sanitizers; insecticide; soaps, detergents and sanitary chemicals; waxes and floor finishes.

The new president, who previously served as first vice-president, succeeds Gordon M. Baird of Baird & McGuire, Inc., Holbrook, Mass., president for two terms. Other officers elected were: first vice-president, Clarence L. Weirich, C. B. Dolge Co., Westport, Conn.; second vice-president, Melvin Fuld of Fuld Brothers, Inc., Baltimore, who has served as program chairman for the June and Dec., 1949, meetings; treasurer, P. C. Reilly, Jr., Reilly Tar and Chemical Corp., Tuckahoe, N. Y., and secretary, H. W. Hamilton, H. W. Hamilton Co., New York.

The following administrative committees were elected by the five divisions of the association:

Aerosol—chairman, H. E. Peterson, Continental Filling Corp., Danville, Ill.; vice-chairman, H. R. Shepherd, Connecticut Chemical & Re-

Retiring president Gordon M. Baird, right, congratulating his successor, Leonard J. Oppenheimer, newly elected head of C.S.M.A.

search Co., Bridgeport, Conn.; John H. Mills, Bridgeport Brass Co., Bridgeport, Conn.; T. B. Welsh, Gulf Oil Corp., Pittsburgh; C. L. Schroeder, Knapp-Monarch Co., St. Louis.

Disinfectants and Sanitizers—chairman, Dr. E. G. Klarmann, Lehn & Fink Products Corp., Bloomfield, N. J.; vice-chairman, William X. Clark, Sterwin Chemicals, Inc., New York; Jack C. Varley, James Varley & Sons, Inc., St. Louis; R. S. Shumard, Monsanto Chemical Co., St. Louis; A. S. duBois, West Disinfecting Co., Long Island City, N. Y.

Insecticide—chairman, T. Carter Parkinson, McCormick & Co., Baltimore; vice-chairman, James A. Green, Standard Oil Co. of Indiana, Chicago; A. C. Miller, Gulf Research & Development Corp., Pittsburgh; G. W. Fiero, Esso Standard Oil Co., New York; Alfred Weed, John Powell & Co., New York.

Soaps, Detergents and Sanitary Chemicals—chairman, H. W. Zussman, Alrose Chemical Co., Providence; vice-chairman, Bernard Freudenthal, Chemical Service Co., Baltimore; Herbert Kranich, Kranich Soap Co., Brooklyn; Charles B. Solly, Harley Soap Co., Philadelphia; Charles R. Lichtenberg, Chicago Sanitary Products Co.

Waxes and Floor Finishes Division—chairman, Bayard S. Johnson, Franklin Research Co., Philadelphia; vice-chairman, M. J. Flanagan, Federal Varnish Division, Chicago; Donald M. King, Masury Young Co., Charlestown, Mass.; L. E. Brunner, Brulin & Co., Indianapolis; Ralph B. Trusler, Davies-Young Soap Co., Dayton, O.

In addition to the officers and divisional chairmen listed above, the board of governors is composed of the following: Howard F. Williams, J. R. Watkins Co., Winona, Minn.; R. T. Yates, Hercules Powder Co., Wilmington, Del.; J. L. Brenn, Huntington Laboratories, Inc., Huntington, Ind. and Gordon M. Baird, retiring president.

The mid-year meeting of the Chemical Specialties Manufacturers Association will again be held at the

Insecticide Division Administrative Committee: Alfred Weed; James A. Green, vice-chairman; Carter Parkinson, chairman; A. C. Miller; George W. Fiero;

Aerosol Division Administrative Committee: H. E. Peterson, chairman; John H. Mills; C. L. Schroeder; H. R. Shepherd, vice-chairman; T. B. Welsh.

Soaps, Detergents and Sanitary Chemicals Division Administrative Committee: Herbert Kranich; Charles B. Solly; H. W. Zussman, chairman; Charles R. Lichtenberg. Not shown is Bernard Freudenthal, vice-chairman.

Waxes and Floor Finishes Division Administrative Committee: Donald M. King; L. E. Brunner; M. J. Flanagan, vice-chairman; Ralph B. Trusler, Bayard S. Johnson, chairman.

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Hotel Drake, Chicago, Monday and Tuesday, June 12 and 13.

Prior to the official opening of the meeting on Dec. 5, meetings of various committees and the board of governors were held on Sunday afternoon, Dec. 4. A get-together of "soapers" was held on the evening of Dec. 4, with about 75 persons present. The morning session on Dec. 5 was a general one, at which reports of the president and secretary were presented, and the nominating committee was chosen. Two talks, "Why the Sanitary Products Market is an Undeveloped One" by William T. Ingram, associate professor of Public Health Engineering, New York University and editorial director of *Modern Sanitation* magazine, and "Personal Observations of Conditions in Western Europe from the Standpoint of an American Business Man" by J. L. Brenn, president of Huntington Laboratories, Inc., Huntington, Ind., concluded the morning session. Mr. Brenn, in his talk, described conditions in the British Isles and on the continent of Europe. He pointed out that Europe was about 30 years behind the United States in sanitation. He also mentioned that age-old divisions in Europe were the greatest obstacle to economic unity on the continent. As an illustration of how socialism strangles private industry and enterprise, he cited the case of a British plant, at which all necessary equipment and materials were assembled for the erection of an addition to the factory that was producing badly needed goods. As a result of governmental red tape, months passed before the firm could obtain the necessary government approval of the expansion plan.

Following a group luncheon, the five divisional meetings were held simultaneously. The first order of business at each of these meetings was the election of the administrative committees listed above. Care in marketing new aerosol products was the theme of an address by H. E. Peterson of Continental Filling Corp., Danville, Ill., first speaker at the aerosol division meeting. His address entitled, "Aerosols—A Boom Industry —Let's Not Ruin It," begins on another page of this issue. Mr. Peterson pointed out that starting out as a gadget type operation, the aerosol industry has grown to the point where in 1950, the volume of business will be around 60 or 70 million dollars, and by 1951 the figure should exceed 100 million dollars.

"The ICC and the Aerosol Industry" was discussed by H. A. Campbell, chief inspector, Bureau of Explosives, New York, who pointed out that his bureau had submitted a specification to the Interstate Commerce Commission which would raise the minimum pressure for beer can type aerosols from 55 to 75 psi. The container for such a product would be similar to the beer can type aerosol, with slightly heavier side walls.

"The Packaging of Foam Products in Pressurized Containers" was discussed by W. E. Graham, director of Research of Crown Can Co., New York. He reviewed some of the early developments in the field, and commented on the problems involved in packaging products in pressurized containers.

The final three papers of the aerosol division meeting were tentative reports of sub-committees. They included: "Triethylene Glycol in Aerosol Bombs" by E. G. Young of Kinetic Chemicals, Inc., Wilmington; "Deodorant Test Methods" by Anthony Haas of Kilgore Laboratories, Washington, D. C.; and "Sale of T.O.T.A. Bombs" by A. C. Miller of Gulf Research and Development Corp., Pittsburgh.

The disinfectant and sanitizers division meeting opened with a paper by Paul A. Wolf of the biochemical research department of Dow Chemical Co., Midland, Mich., entitled, "Synthetic Phenolics in Pine Type Disinfectants." Dr. Wolf's paper was published in full in the December, 1949 issue of *Soap & Sanitary Chemicals*.

Factors involved in toxicity were discussed in a paper, "Important Toxicological Properties" by Herman A. Shelanski of Industrial Toxicology Laboratories, Philadelphia. Defining toxicity as "the sum total of all harmful effects upon an organism," Dr. Shelanski confined his remarks to toxicity of materials to warm-blooded animals. Two considerations in evaluating the toxicity of a product are: Does it have a use? and can it be made in a standard manner? were covered in the talk.

Although he was scheduled to speak on "Industrial Sanitation," John M. Stewart of the applied research laboratories of Armour & Co., Chicago, spoke on "Quaternaries—Microbe Killers." Initially he discussed their chemical make-up and uses and methods of application. In his talk, Mr. Stewart pointed out that "Detergent sanitizers are not the perfect antidote to cover careless work, nor are they a cure-all for sanitation problems." They must be used with common sense and reason. They should

Dr. E. G. Klarmann, Lehn & Fink Products Corp., Bloomfield, N. J., is chairman, and William X. Clark of Sterwin Chemicals, Inc., vice-chairman of the Administrative Committee of the Disinfectants and Sanitizers Division.

be used according to manufacturers' directions. Only reliable companies who can fully back up their claims should be considered as a source of supply. Adequate bacteriological policing should be carried out and intelligent housekeeping should be considered of foremost importance."

Also speaking on quaternary ammonium compounds was W. L. Mallman, professor of bacteriology and public health at Michigan State College. He covered "Some Phases of Development of the Quaternary Ammonium Field."

Control of relative humidity, temperature and frequency of air change is required for significant vaporization of glycol vapors in the home it was declared by Irvin Kerlan, M. D., acting medical director, Food and Drug Administration, Washington, D. C., who spoke on the subject of "Present Status of Glycol Vapors for Air Sanitation." Such accurate control relies upon highly sensitive instruments, he pointed out. Other factors affecting effectiveness of glycol vapors were listed as the state and size of bacteria in the air. Dr. Kerlan also stated that the Food and Drug Administration "seriously question(s) whether glycol vapors are of any practical value under ordinary home and office conditions and doubts whether it is possible to write adequate directions for the use of the devices in view of the strict and constant engineering control required to maintain effective concentrations of glycol vapor."

The paper, "Experiences in Testing Commercial Quaternary Ammonium Germicides," presented by L. S. Stuart, who was co-author with John Bohusky and J. L. Friedl, Bacterial Section, Insecticide Division, U. S. Department of Agriculture, appears beginning on another page of this issue. The final paper of the disinfectant session dealt with the problems involved in "Swimming Pool Sanitation," presented by William J. Cary, director, Bureau of Public Health Engineering, Office of Health

(*Turn to Page* 131)

AEROSOLS...

A Boom Industry, *Let's Not Ruin It!*

By H. E. Peterson*
Continental Filling Corp.

AEROSOLS have progressed from a gadget to a thirty-three million dollar business in two years, with an estimated sixty to seventy million dollar annual volume in 1950. In 1951, the dollar volume will probably exceed one-hundred million dollars. The above figures are predicated on the sale this year of from twenty-three to twenty-five million aerosol products at an average price of $1.33. Of the above quantity, about fifteen million were insecticides, five million deodorants, and from three to five million of other miscellaneous products.

While it hardly seems credible, there are still a few people, including some in the Chemical Specialties Manufacturers Assn., who feel that aerosols are merely a fad. However, the last two or three years have definitely changed the situation. As late as three years ago, there were perhaps only a half-dozen or at the most one dozen people who honestly felt that aerosols had any kind of a future. Today the situation is just about reversed, with perhaps only a handful of people who still resent the progress of this new industry.

Why anyone ever tries to hold up the progress of any innovation which will do a necessary job in a simpler manner and at a comparable cost is almost beyond comprehension. However, the over-all feeling is perhaps shown by the fact that C.S.M.A. has seen fit to place aerosols in a separate division.

Another method of comparison can be shown by a study of the 1947 figures for insecticide manufacturers issued by the U. S. Bureau of Census. These figures show the beginning of the rapid rise in aerosol household insecticides partially at the expense of the other types. Although it is questioned that some of the figures are complete, they do afford a basis for comparison. Whereas there were no figures on aerosols for 1939, the last previous census year, because aerosols were not then on the market, the 1947 figures show something over seven million dollars. During that same eight year period, regular fly sprays were shown as losing seven percent in sales volume. Based on the continued expansion of aerosols in 1948 and 1949, there seems little doubt that they dominate the household insecticide market today.[1] However, on the basis of dollar volume it is important to note that the sale of aerosol insecticides usually added to the overall sales of household insecticides rather than detracted 100% from the sales of liquid sprays. There very definitely is a place for both methods of dispensing. It is unfortunate that some individuals through shortsightedness claim the over-all superiority of one or the other of the two types of dispensers.

In this discussion there will be, of necessity, no mention made of any concern and every possible precaution has been taken to try to cover up specific identities. However, it will be necessary to mention types of products in order to illustrate various points.

It was only natural that since the introduction of aerosols in the armed forces was for the purpose of dispensing insecticides that this was the first large volume item marketed commercially. In this case we were fortunate in having the basic patent controlled by the U. S. Dept. of Agriculture since it licensed various firms to operate under this patent, provided they met certain formula requirements. From what we have seen of other products where no control exists, one can imagine the type of inferior product which might have come on the market. It is even felt in some circles that the requirements set up by the U. S. D. A. were too low, and judging from their recent reactions, it seems that they are taking steps to raise the requirements.

As will happen in any industry, new selling organizations in order to break into the market will use the so-called "gyp" method of selling whereby they lose money on one item in their line and attempt to make up this loss with other items which are marked up, in some cases far in excess of normal. It soon became apparent to a number of these firms that you do not sell insecticides on price alone, but that the name and reputation of the merchandising firm meant far more than just price. The first year that low pressure insecticidal aerosols appeared on the market an immediate price war took place, which upset the whole industry and which retarded its progress for at least a year. During the last year, the business has gotten on a more firm footing and indications are that the retail price will rise even steadily higher next year. This should help the industry, since it would permit the giving of the proper mark-ups all through the merchandising chain.

* Paper before Chemical Specialties Manufacturers Assn., Washington, D. C., Dec. 5.

Deodorants

WHILE aerosol deodorants were new in the 1949 season, their volume was still very substantial. It is expected that the volume of deodorants will increase materially during the 1950 season. Although there are any number of schools of thought on just how a deodorant works, it is almost the unanimous consensus that a product of this type should actually deodorize any odoriferous materials rather than merely mask the odor for a few minutes. In a short period of time, the buyers for large department stores learned the difference between a so-called mask and a true deodorant. Needless to say, the best over-all sellers were the true deodorants, of which there are perhaps four or five on the market today. Work is now underway by the aerosol division's technical committee to develop a standardized method of evaluating various deodorants.

Waxes

A DISCUSSION of the possibility of applying waxes by means of the aerosol method of dispersion was presented at the June meeting of the N.A.I.D.M. in Chicago.[2] Immediately after the presentation of this paper, the country became wax aerosol conscious. In fact, some people believe too much so. My reason for stating this is that a great many people started to forward various wax formulations to the fillers for incorporation in aerosol dispensers. No thought was given to the proper formulation or to the development of any type of dispensing mechanisms. In order to properly formulate a wax to be used in the present dispensers and valves, considerable research work must be done and long term storage tests conducted. After a formulation is developed, proper instructions should be given for operating the container and some restraint should be put on the advertising departments of the merchandising firms. While there has been a tremendous amount of advertising done on the use of aerosol waxes, very few of these advertisements caution the prospective buyer to clean his car prior to waxing, and many claimed coverage of an area too great for the contents of the container. In the long run, claims of this sort will hurt the sales not only of wax aerosols, but of other aerosol products as well.

There are a number of valves now being used for aerosol products, such as insecticides and deodorants, which are not suitable for dispensing wax. It should be recognized that a valve designed for one specific product may not work for any and all other types of aerosol products.

Paints

THE lack of interchangeability of valves applies even more directly to paints than to wax products. It is possible, after a considerable amount of work, to utilize some of the present valves for dispensing paint products. However, by and large, the type of valve used for an aerosol-type product is not completely satisfactory for applying a coating compound, such as paint.

The sales potential of an aerosol touch-up enamel cannot be estimated accurately, but could in all probability be one of the largest pressurized type packages. Aware of the market potentialities of aerosol enamel dispensers, several firms tried to jump the gun and come out with products which had not been thoroughly tested. Needless to say, chaos resulted and in one case, we have heard that 90% of the cans of one manufacturer were inoperative after standing for a few weeks. We understand another firm is expecting to have a 20% customer return. Maybe this is sound business, but thank goodness most of the people in the industry don't think so.

Paint is one product which should have at least a six months' shelf storage test under various conditions before the product is ever submitted to the public for their acceptance. In some of the colors, it is possible perhaps to shave this time somewhat.

Present filling equipment is not adequate to handle products such as paints. We know that the various insecticide manufacturers present would not like to see their products being dispensed and depositing a red or black paint film on various objects in a room. One paint manufacturer who contemplates merchandising this product in aerosol dispensers recently stated "that the present filling equipment is controlling the quality of our product." This condition, of course, should not continue to exist, and we know that some fillers will be equipped very shortly to properly handle paint-type products.

Bactericides

THE introduction of an aerosol bactericide containing products such as triethylene glycol, could be developed into a profitable business and one which could be of definite help to the ultimate consumer. However, it cannot be emphasized too strongly that until further research is completed claims for the effectiveness of this and similar products should be held to a minimum. Various other problems such as compatability and corrosion also enter the picture. It is recommended that new firms contemplating marketing air sanitizers do so cautiously and thoroughly know the field.

Mothproofing Compounds

AEROSOL moth products could develop into a substantial volume if and when proper formulations are developed. Serious trouble has been encountered in the use of most of the mothproofing formulations on the market so far. Some have clogged the valves, others have been corrosive to the container, and most of them have left too oily a deposit on the clothes. As a result several firms have had to pay numerous cleaning bills. It is another case of trying to go ahead too fast and not spending time on the development of a proper formulations. This is one problem which should be licked very easily.

In addition to problems encountered in packaging specific products, there are also several general procedures which are somewhat questionable. One of these is the quantity of material which is filled in containers. As is known, the industry as a whole agreed two years ago to put a definite excess of material in the can

Typical of the wide variety of products that can be and are being packaged in aerosol form is the above group. Photo courtesy Crown Can Co.

to deliver the stated net contents on the package. However, several packages have recently come out in which the firms had increased the head space, the only purpose of which is to save ingredient cost. Needless to say, the Federal Trade Commission is and should be watching this situation very closely. While in the present containers a fairly high percentage of head space is required for safety, it certainly will not help the industry to increase head space over and above what is needed purely for economical and merchandising reasons.

Another important factor which should be watched very carefully is the inflammability of the resultant product in a pressurized dispenser. It is suggested that before any questionable product be marketed that it be submitted to the Bureau of Explosives for approval.

It is hoped that in the above discussion I have not given the impression that the majority of products appearing on the market are necessarily involved in any of the above statements. However, we all know that a small minority can upset the good work of the rest of the industry.

It is realized that every industry, new or old, has definite problems and while no effort will be made to answer all of these, there are a few ideas which could be tried. It is hoped that under the new set-up in the CSMA that some of these problems can be ironed out. This, nevertheless, is not the final answer and our main suggestion is to go slow on the introduction of new items, know the subject thoroughly, have the proper container, valve, and formulation necessary to do the proper job, and consult suppliers of materials and fillers for their recommendations and thoughts on your proposed programs.

References

1. *Soap and Sanitary* Chemicals editorial, Nov. 1949, Page 119.
2. E. J. McKernan's "Spray Wax in Aerosol Dispenser" N.A.I.D.M. Convention, Chicago, Ill., June 14, 1949.

Hild Holds Open House

A reception and open house to celebrate the occupancy of its own building at 740 W. Washington Blvd., Chicago, was held by Hild Floor Machine Co., Dec. 17.

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Difficulties Encountered in

Testing Quaternary Germicides

By L. S. Stuart, John Bogusky and J. L. Friedl*

Insecticide Division, Livestock Branch, Production and Marketing Administration, U. S. Department of Agriculture

TENTATIVE procedures for evaluating quaternary ammonium germicides were outlined in an earlier report (*Soap and Sanitary Chemicals* 23: 9 p. 35, 1947). It was announced in that report that it was the intention of the Insecticide Division to adhere to these procedures until further notice in checking labeling claims made for commercial preparations of these materials. The procedures outlined were selected on the basis of the prevailing knowledge as those most likely to indicate true bactericidal rather than bacteriostatic levels and at the same time provide results which could be interpreted on the basis of previous experience in terms of safe use dilutions.

In accordance with this announcement, the Insecticide Division has for the past two years examined all official samples of quaternary ammonium germicides collected by two methods. With *S. typhosa* the A.O.A.C. phenol coefficient method modified to employ Letheen Broth for subculturing was used. When *M pyogenes* var *aureus* was employed as the test organism a ring carrier "Use Dilution" procedure was employed. The results have not been entirely satisfactory.

A review of the record shows that clear-cut tests indicative of the phenol coefficients claimed can usually be secured, providing a series of determinations are made. However, for every clear-cut test result in any series of determinations by this method, one or more results of a negative or indeterminate character have ordinarily been obtained. In the "Use Dilution" tests against *M. pyogenes* var *aureus*, the dilutions indicated as safe by multiplying the coefficients claimed and tentatively confirmed by the figure 20 to determine the number of parts of water in which one part of germicide should be incorporated, the results have been on the whole of a negative character since in all but a few isolated instances 1, 2, 3, and sometimes 4 or more of the 6 ring carriers employed have shown growth after exposure for 10 min. at 20°C when subcultured in Letheen Broth.

Some of the results secured against *M. pyogenes* var *aureus* by the ring carrier method on official samples of commercial preparations of two different quaternary ammonium germicides at the safe use dilution of the pure salt, indicated by the coefficients claimed, are given by way of illustration in Table I.

It is interesting to note that the total number of exposed ring carriers showing growth was greater with quaternary ammonium germicide 1 at a dilution of 1-4000 than with quaternary ammonium germicide 2 at 1-5000. In both cases, however, the negative and indeterminate character of the result is quite apparent.

Since indeterminate and negative results with these products, of the type shown in Table I, are frequently ascribed to such factors as the neutralizing effects of oil, soap, or acid cleaning solution residues on the glassware employed, exhaustive precautions have been taken to eliminate errors due to these factors. The entire routine for cleaning and rinsing glassware was changed a number of times. Eventually all washing procedures involving soap or acid cleaning solutions were discontinued and replaced by a procedure based on the use of a synthetic non-ionic detergent in tap water, followed usually by a distilled water rinse. None of these changes appeared materially to alter the general character of the results secured.

In at least two instances, a portion of the negative and/or erratic results was traced directly to contamination of the commercial product with viable bacterial endospores which germinated and grew in the subculture broth, although the actual test organism appeared to have been

TABLE I. Confirmative Ring Carrier Use Dilution Test Results on Commercial Quaternary Ammonium Germicides

Quaternary Ammonium Germicide 1 at Dilution of 1 - 4000			Quaternary Ammonium Germicide 2 at Dilution of 1 - 5000		
Det. No.	*Number of Rings*	*Number Showing Growth*	*Det. No.*	*Number of Rings*	*Number Showing Growth*
1	6	4	1	6	1
2	6	2	2	6	4
3	6	4	3	6	1
4	6	1	4	6	3
5	6	3	5	6	2
6	6	3	6	6	3
7	6	3	7	6	0
8	6	4	8	6	1
9	6	1	9	6	1
10	6	1	10	6	1
11	6	3	11	6	2
12	6	3	12	6	2
13	6	3	13	6	1
14	6	4	14	6	2
15	6	2	15	6	3
16	6	3	16	6	2
17	6	2	17	6	4
18	6	0	18	6	1
19	6	3	19	6	0
20	6	2	20	6	3
TOTAL	120	51	TOTAL	120	37

* Paper given by L. S. Stuart before Disinfectant and Sanitizers Division, Chemical Specialties Manufacturers Assn., Washington, D. C., Dec. 5.

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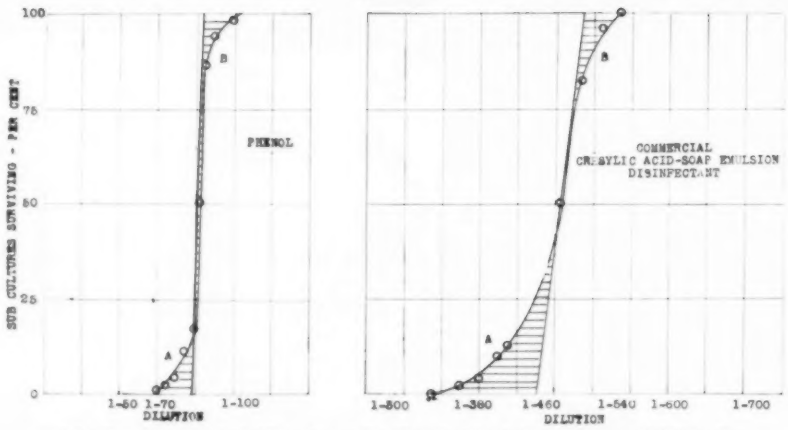
FIGURE 1.



Subculture Survivor Probability Curves For Phenol and a Selected Commercial Cresylic Acid Soap Emulsion Type Germicide.

killed. Thus, a system of sterility controls was installed so that corrections could be made for this factor. This did not alter the over-all picture described above, since all but 3% of the commercial samples examined have been sterile.

Direct comparisons were made on representative samples employing the routine procedures and other empirical procedures that have been suggested by different workers as more suitable for testing these materials. A review of the results obtained by these other methods indicates that they do not appear to furnish a more precise or sharper index to germicidal levels of these materials than the routine procedures employed. They may be of definite value in arriving at an accurate final appraisal of true, safe use dilutions, but accuracy should not be confused with precision which is determined on the basis of reproducibility and the reliability of a single determination as an index.

The presently accepted and commonly recommended disinfecting levels for these chemicals have been established primarily by the phenol coefficient method of testing or a phenol coefficient type technique offered under some other name to conceal apparently the author's apprehension that reference to the term phenol coefficient might subject them to a share of the indiscriminate criticism recently directed toward this method.

In view of this and of the knowledge that the phenol coefficient procedure is the only procedure in which any concerted effort has ever been directed at precision through such factors as standardization of test culture resistance, it seemed proper to center the first part of our investigations on these products within the framework of the phenol coefficient procedure; to determine wherein the results obtained by this method differ from those secured with phenol and some commonly encountered commercial cresylic acid emulsion disinfectants.

Attempts to draw significant comparisons along this line by employing logarithmic time survival curves based on plate counts made at intervals of 1, 2, 5, 10, 15, and 30 minutes from tubes containing 4.5 mls. of selected dilutions of these products and 0.5 mls. of the standardized 24 hour broth culture of *S. typhosa* failed to provide data which clarified the problem because the zero count time could not be duplicated with sufficient consistency in most instances. Lack of consistency on this point was not confined solely to the quaternary ammonium type products, but was also observed with a number of cresylic acid emulsion type disinfectants. With the former, this lack of consistency can probably be attributed to a slowing down of the killing rate with time, a phenomenon recently reported by Migaki and McCulloch (*J. Bact.*, V. 58, 2 p. 161, 1949). With the latter, the exact cause remains to be determined, but possibly it could be due to the same factor.

Comparisons drawn on the basis of replicate determinations on varying dilutions of these medicants, held for a stipulated time period at a temperature of 20°C., did, however, provide information that appears to have a definite bearing on the interpretation of phenol coefficient values, the development of a better understanding of the activity of quaternary ammonium germicides, and possibly on the eventual establishment of safe disinfecting use dilutions with the various quaternary ammonium germicides and other types of germicides which can enjoy wider acceptance than some of the use dilutions now recommended and tentatively accepted.

It was found that a very large number of replicate determinations at each selected dilution seemed to be necessary to secure an informative picture. Thus, it was necessary to select a stipulated time period of from 10 to 12 min. in order to secure the number of determinations required on the quaternary ammonium germicides in these studies within the time available. It should be pointed out that any variation due to the use of this 2 min. sampling period would tend to be reflected in results more favorable to the quaternary ammonium germicides examined than would have been the case with an exact 10 min. time interval which was employed with phenol and the commercial cresylic acid soap emulsion germicide for which results are also given. Between 50 and 100 replicate determinations have been made in this study on selected series of dilutions of phenol, a cresylic acid soap emulsion germicide, and two quaternary ammonium disinfectants. The results have been tabulated on work sheets as + or − values indicative of growth or the absence of growth in the subculture medium after incubation for 48 hrs. at 37°C. Letheen Broth was used as the subculture medium of choice with quaternary ammonium compounds and nutrient broth with phenol and the cresylic acid soap emulsion type product.

The percentage of + or positive tubes secured from subcultures at each dilution was then determined and probability subculture survivor curves plotted for each product. Obviously, an infinite number of determinations at each dilution would be necessary to secure curves of absolute accuracy. It is believed, however, that enough determinations have been made with selected products to provide information that is statistically significant.

The results of these studies with phenol and the commercial cresylic acid soap emulsion type disinfectant for which the manufacturer claims a phenol coefficient of 5.0 are shown in Figure 1.

From this figure, it can be seen that the subculture survivor probability curve for nutrient broth cultures of *S. typhosa* standardized in the conventional manner when exposed to phenol is a vertical sigmoid-shaped curve. The number of + or positive tubes at the 1-90 dilution is relatively small, being on the order of 17 percent. The number at the 1-95 dilution is very high, amounting to 86 percent. At the stronger dilutions of 1-85, 1-80, 1-75, and 1-70, the percentages surviving were 11, 6, 3, and 1 percent, respectively. At the weaker dilution of 1-1000, 94 percent of the cultures survived, and at a dilution of 1-110, 98 percent of the cultures survived. If a straight line is drawn through the 50 percent point of this sigmoid-shaped curve in a manner so that it will form a common tangent for both ends of the curve and extended until it intersects the base line, it can be seen that the most probable average 10 min. critical killing dilution for phenol for the test culture standardized as prescribed in the official phenol coefficient method is approximately 1-88. The shaded zone "A" at the left of the base of the common tangent line beneath this curve can for convenience be designated as the zone or area of "occasional survivors" and the shaded zone "B" above the curve to the right of the extended common tangent can be designated as the zone or area of "accidental deaths." With phenol both of these areas are small. This, combined with the fact that the common tangent line is almost perpendicular to the base line, makes it possible to state that a test by this method gives a sharp, well defined end-point for the pure chemical phenol with a relatively small factor of error.

The curve for the cresylic acid soap emulsion disinfectant for which the manu-

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facturer claims a phenol coefficient of 5.0, shown in this same figure, possesses the same sigmoid-shaped characteristic as phenol, but is inclined to slope at a slightly more acute angle. The percentage of survivors at the 1-400 dilution is 2.0 and at the 1-420 dilution, 4. At a dilution of 1-440, 10 percent survived; at 1-450 a 12.5 percent survival is indicated; at 1-510, 50 percent of the cultures survived; while at 1-550, 95 percent survived, and all survived at a dilution of 1-570. A straight line drawn through the 50 percent point of this curve as a common tangent to both ends of the sigmoid-curve intersects the base line at a dilution value of approximately 1-475.

On the basis of the mean resistance shown by the test culture to phenol, this average 10 min. critical killing dilution provides the manufacturer with a mathematical justification for the phenol coefficient of 5.0 claimed. It should be pointed out, however, that the size of zone "A" or the area of occasional survivors does represent the extent to which failure of the product to kill in 10 min. can be expected, and that the size of this zone is considerably larger with the cresylic acid germicide than with phenol. On the other hand, a theoretical coefficient based on the absolute critical killing dilutions of 1-68 shown for phenol and 1-375 shown for this product would likewise justify a phenol coefficient claim of 5.0. Also, the length of the occasional survivor zone base line is 5 times as long as for the corresponding zone with phenol. When considered in proportion to the total length of the base line from zero to the mean critical killing dilution level, the survivor zone is of a similar magnitude to the result secured with phenol. Thus, one might justifiably expect that the conventional procedure of multiplying the coefficient by 20, to determine the number of parts of water in which one part of the germicide should be incorporated to secure a dilution equivalent in germicidal value to a solution of 5 percent phenol, would in this instance provide an adequate margin of safety to cover the failures of the product in the test method. It would also cover the more severe conditions which would ordinarily be encountered in the use of the product.

Since the significance of a single determination by the method will diminish as the sizes of area "A" and area "B" increase and the angle formed by the tangent and base line becomes more acute, it is obvious that a single determination on the cresylic acid soap emulsion germicide by the method has somewhat less value than a single determination on phenol.

Data secured with two commonly distributed quaternary ammonium germicides by the same type of testing procedure have been used to construct the subculture survivor probability curves shown in Figures 2 and 3.

In Figure 2, the curve drawn as a continuous line through the solid circles represents the results secured with water dilutions of quaternary ammonium germicide number 1 of Table 1. The subcultures survivor probability curve for this product is also sigmoid-shaped. The actual percentage of surviving subcultures for the dilutions tested were 100 at a dilution of 1-30,000; 98 at 1-25,000; 74 at 1-22,500; 54 at 1-20,000; 8 at 1-17,500; 4 at 1-15,000; 2 at 1-12,500; and 0 at 1-7,500. A straight line drawn through the 50 percent point of this sigmoid curve as a common tangent to both ends of the curve intersects the base line at a dilution of approximately 1-17,800.

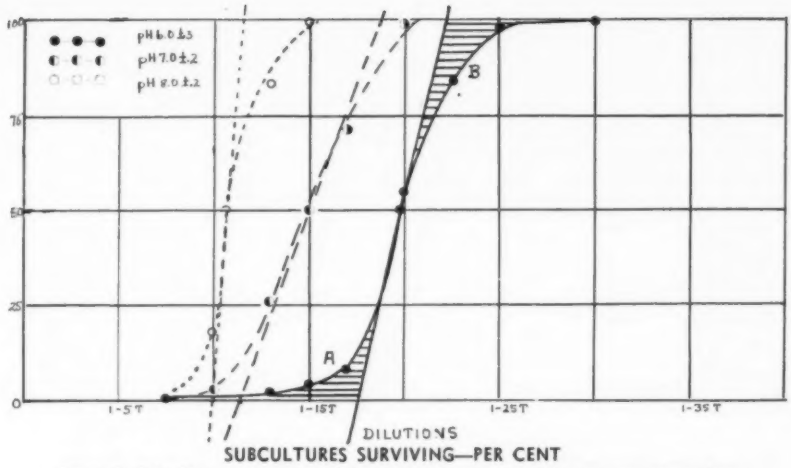

Figure 2: Subculture survivor probability curves for commercial quaternary ammonium germicide 1.

It so happens that the manufacturer claims a phenol coefficient for this chemical of 200. Since the test culture used possessed an average resistance to phenol of 1-88, it is clear that the manufacturer has the same tentative mathematical justification for this claim as the manufacturer of the cresylic acid soap emulsion germicide had in making a coefficient claim of 5.0. However, here again the mathematical value indicated should be weighed against the size and extent of the shaded zone of occasional survivors below and to the left of the tangent. With quaternary ammonium germicide 1, the zone is long and narrow, extending from the value of about 1-17,800 to an indicated zero point at 1-9,000 or slightly less. Thus, the base line extension of this area is 440 times as long as the base line extension for the similar area with phenol and 88 times as long as with the commercial cresylic acid soap emulsion germicide studied. It covers approximately half the distance of the base line from the mean critical killing dilution to the zero point on the scale and proportionately this is twice the magnitude observed with phenol and the commercial cresylic acid germicide. There would seem, therefore, to be adequate reasons for questioning the phenol coefficient claim of 200 made, on the basis that the safety factor commonly employed in converting this value to a safe use dilution might not be adequate to compensate for the deficiencies shown by the product in the test as well as the more severe conditions likely to be encountered under ordinary conditions of use.

In Figure 2, the slope of the tangent is quite acute; the occasional survivor zone "A" and the accidental death zone "B" are also much larger than similar zones observed with phenol or the

(*Turn to Page* 137)

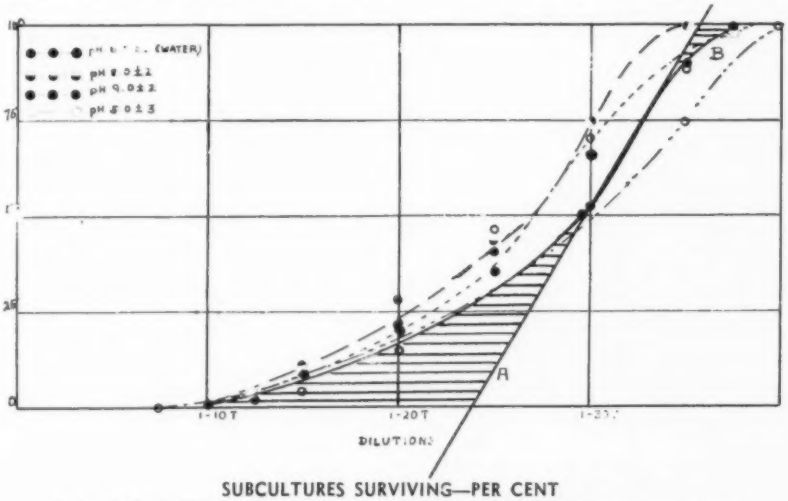

Figure 3: Subculture survivor probability curves for commercial quaternary ammonium germicide 2.

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Insect Resistance AAEE Tampa Topic...

Entomologists study problem of insect resistance to insecticides. New insecticides may help. Tests with synthetic Cinerin I and synergist reported.

ACQUIRED resistance of insects to insecticides was among the important topics discussed at the 61st annual meeting of the American Association of Economic Entomologists, held at Tampa, Fla., December 13-16. With most of the prominent entomologists of the country, including both government, university and commercial men, in attendance, there was general recognition that this is the most serious problem entomologists have been called on to face in many years. As an aid to the solution of the problem a number of new insecticides were announced at the meeting. Particular interest was shown in progress reports on the new allyl analog of Cinerin I which apparently bids fair to replace natural pyrethrum for some uses. It offers an even lower toxicity hazard to humans and warm-blooded animals than does natural pyrethrum, and may be available, when output is increased, at about two-thirds the present cost of the natural product.

In view of the increased resistance to residual sprays of many house fly strains being encountered in control work throughout the country, the opinion was expressed by many entomologists that there may be a trend back to much wider use of space sprays during the coming season. Larvacides may also play an increasingly important part in solving the future fly problem, it was predicted.

The A.A.E.E. named Dr. C. P. Clausen of the U.S.D.A. as president for the coming year, succeeding Dr. A. M. Boyce of the University of California. Dr. Roy Campbell of Alhambra, Calif. is the new vice-president.

Discussed at the meeeting was a proposal to merge the American Association of Economic Entomologists and the Entomological Society of America. Final action on the merger proposal may be taken at next year's meeting which is scheduled to be held in Denver. The E.S.A. met with the A.A.E.E. at Tampa as usual, and concurrent meetings were held also of the Florida Pest Control Operators and the Florida Entomological Society.

President's Address

A. M. BOYCE, AAEE President, addressed the opening session of the A.A.E.E. meeting, commenting particularly upon the challenge which entomologists face in the apparent tendency for insects to develop resistance to various insecticides used to control them. He characterized this as the greatest problem the economic entomologist has ever had to face, but predicted that in the final analysis, it will prove a great boon to the industry by making necessary the initiation of fundamental studies in physiology and toxicology, which will inevitably produce the information needed to solve the problem.

Mr. Boyce reviewed the contributions of citrus entomology toward the development of fundamental principles and practices of entomology. Insect attacks on the country's valuable citrus crop have been responsible, over a long period of years, for a long series of developments in insect control, he reminded. The dinitro cyclo hexyl phenols, for instance, were developed for the control of mites on citrus trees in foliage. Citrus entomologists, he added, have also been responsible for much work in studying insect susceptibility variations and also for studies of the mode of action of insecticides,—thereby benefiting the rest of the industry tremendously.

Resistance To Insecticides

ACQUIRED resistance to insecticides by insects was discussed in a series of five papers at the morning session, December 16. R. L. Metcalf of the University of California, delivered a paper of which A. M. Boyce was co-author, reporting on work with insecticide-resistant insects in California. Following discovery of the original Bellflower strain of houseflies which were more than 300 times as resistant to DDT as ordinary laboratory reared flies, this strain has developed an even

OFFICERS AND DIRECTORS OF A.A.E.E.

Below (L. to R.) LeRoy Childs, entomologist, Hood River, Ore.; S. A. Rohwer, U.S.D.A., Washington, D. C.; A. M. Boyce, Riverside, Calif., retiring A.A.E.E. president; Charles E. Palm, Cornell University, Ithaca, N. Y.; C. P. Clausen, U.S.D.A., Washington, D. C., newly-elected A.A.E.E. president; Roy Campbell, Alhambra, Calif., new vice-president and E. N. Cory, College Park, Md., A.A.E.E. secretary-treasurer.

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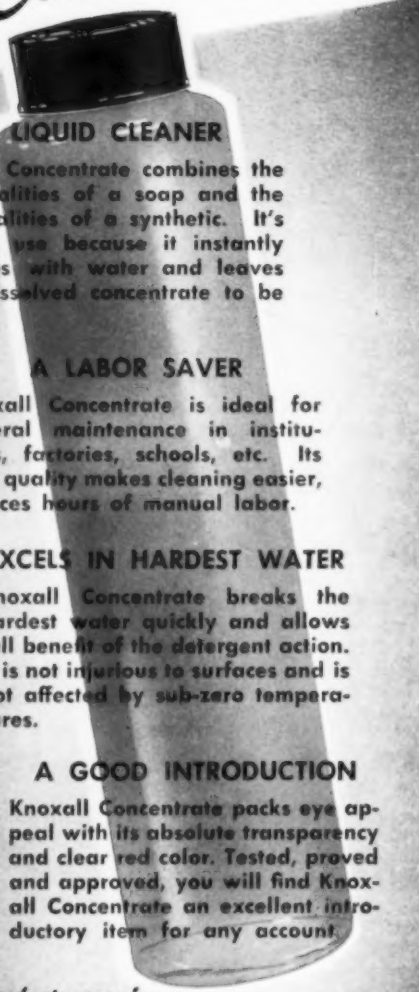

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further resistance as more generations have been exposed. They are now working with a "super" Bellflower strain, which Dr. Metcalf indicated can scarcely be killed by DDT at any concentration. Their studies show also that flies which acquire resistance to one insecticide also tend to develop resistance to others. In their recent work at Riverside, flies have been developing resistance to gamma BHC, he reported. Work with parathion has shown the same result, with a resistance of three to five times normal being built up at the end of four or five generations.

W. V. King of the B.E.P.Q., Orlando, Fla., reviewed work at the Orlando laboratory on the same subject, while S. W. Simmons of the U. S. Public Health Service, Savannah, Ga., also reported on "Resistance of Flies to DDT."

The following summary from the paper of W. N. Bruce and G. C. Decker, Natural History Survey, Urbana, Ill., "Studies of House Fly Tolerance for Insecticides", gives a current picture of findings and the thinking of research men on this extremely important topic:

Conclusions

1. Intensive selection and inbreeding resulting from exposure of adults and larvae to some toxicants produces resistant strains of flies.

2. Generally, the increase in tolerance is slow during the first several generations and then increases rapidly when resistance becomes definitely established.

3. Flies highly resistant to one toxicant become resistant to others more readily than susceptible strains.

4. Under pressure of some insecticides, resistance will rise sufficiently to maintain the species in equilibrium with its environment.

5. In the absence of insecticides, DDT house fly strains of low or high resistance tend to retain their resistance at a constant level for as many as thirty generations.

6. Highly resistant strains of flies show significant changes in tolerance to other insecticides. Some changes are specific while others appear non-specific in nature.

7. Toxicants of mixed composition do not produce tolerance changes as readily as pure compounds.

8. Multiple tolerant strains of house flies can be produced by exposing the methoxychlor strain of larvae and adults to mixtures of chlorinated hydrocarbons.

9. Resistant inheritance factors are carried by both sexes. Crosses result in physiological blends of resistant characters which, in the absence of DDT, persist through as many as fifteen generations of inbreeding without measurable changes. Resistance appears to be an indifferent genetical change.

10. House fly resistance to DDT on Illinois farms has attained sufficient magnitude to suggest the discontinuance of DDT treatments for fly control.

11. More vigilance is needed in determining the onset of resistance to other insecticides. The recommendations should be changed before the tolerance to a toxicant exceeds that of four to eight times normal.

In a discussion period which followed, the point was brought out that in working with DDT-resistant strains of flies some reports indicate control for a week or so, after which the control lapses. The explanation was advanced that the control obtained is based on the effect of the initial application as a space spray, and that there is none of the residual control originally associated with DDT use. The consensus of many participating in the discussion was that this might well foreshadow a return to much wider use of space sprays, with the emphasis on use of a mixture of a number of toxicants such as DDT, BHC, chlordane, pyrethrum, toxaphene, etc., to assure that flies which have developed resistance to one or more of the toxicants will still be killed by the other ingredients.

The opinion was also expressed that there may be an expanded future for larvicides for fly control, particularly where the flies are of the resistant varieties. One explanation advanced in the discussion for the development of resistance was that the larvae in the manure pile may receive sub-lethal dosages of insecticide, leading to a rapid build up of resistant strains. With larvae of resistant strains more and more difficult to kill, the opinion was expressed that even more emphasis may have to be placed on sanitation around breeding areas and the use of effective larvacides.

Reports on Cinerin I

DR. F. C. BISHOPP, Bureau of Entomology and Plant Quarantine, Washington, summarized preliminary results of the bureau in testing the insecticidal efficiency of the newly developed synthetic pyrethrin-like materials against various insects. While earlier test results had indicated a high order of toxicity against the house fly, later tests using the Peet-Grady method, rather than the turntable method, indicate no particular superiority in the synthetic materials over natural pyrethrum. Subsequent tests of both materials against the American cockroach show natural pyrethrum to be two to five times as toxic as the synthetic. Approximately the same degree of toxicity was exhibited against the yellow fever mosquito.

Tests using synergists would seem to indicate that it is not safe to assume that comparable results will be obtained with synthetic and natural products. A number of synergists like piperonyl butoxide are comparatively ineffective when used with the synthetic materials, while at least one synergist seems to give a satisfactory improvement in toxicity. Further test work needs to be done along this line, Dr. Bishopp indicated.

Preliminary tests on acute toxicity of the synthetic to rats suggests that it is even less toxic than the natural, which itself exhibits an extremely low order of toxicity.

Dr. Joseph B. Moore of McLaughlin Gormley King Co., Minneapolis, also read a paper on the same topic. Dr. Moore's research disclosed that the synthetic material is equally or possibly even more effective than natural pyrethrins on flies, but that on roaches and other field insects, when used in concentrations normally recommended with natural pyrethrins, the synthetic is less toxic. Dr. Moore reported favorably upon the effectiveness of N-2 ethyl hexyl imide of endomethylene tetra hydro phthalic acid ("264" made by Van Dyk & Co.) and two homologues thereof as synergists for the synthetic allyl homolog of Cinerin I, particularly for the control of roaches. This synergist, plus the synthetic allyl homolog of Cinerin I shows considerable promise also for the control of other insects such as stored grain insects, flies and others.

Toxicity Studies

SOME interesting theories on the way in which some of the new insecticides kill were presented by Dr. R. L. Metcalf, University of Cali-

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fornia, in his paper, "Insect Toxicological Studies with New Compounds". The organic phosphate insecticides such as parathion, tetraethyl pyrophosphate and their derivatives, he pointed out, are extremely effective inhibitors of the enzyme, cholinesterase, and this inhibition accounts for their toxic action in insects and mammals.

The entire subject of toxic residue on plant and animal products, following insecticide use, was discussed at the morning session, December 15. In a paper by D. E. Howell and F. A. Fenton of Oklahoma A. & M. College, Stillwater, reports were submitted on analyses of milk and tissues from animals sprayed with DDT, chlordane, BHC, methoxy DDT and toxaphene. Unless cattle were sprayed much more frequently than was necessary for external parasite control, these investigators reported, the total organic chlorides present in the milk were not greater than two ppm regardless of the insecticide used. Less than 10 ppm were stored in the tissues.

In a paper reporting on experimental work on the same subject at the Kerrville, Texas, laboratory, three years' studies on the effects of use of sprays and dips of DDT, TDE, methoxychlor, chlordane, toxaphene, lindane and mixed isomers of BHC were reviewed. All of these insecticides, when applied as sprays or dips, were absorbed and stored in the fat, it was reported. Spraying dairy barns with DDT or TDE for fly control resulted in milk contamination unless special precautions were taken.

Fly Control Tests

Tests conducted in Florida in 1948 and 1949 to evaluate the effectiveness of various insecticides for the control of houseflies in dairy barns were reported upon by I. H. Gilbert and H. G. Wilson, B.E.P.Q., Orlando, Fla., and J. M. Coarsey, Savannah, Ga.

The best results were obtained with chlordane, followed by lindane and Compound 497. Toxaphene, DDT, and methoxychlor were effective in some barns but not in others. Pyrethrum extract combined with piperonyl butoxide was ineffective. Laboratory tests with flies from various dairies in one locality showed that all were much more resistant to DDT and methoxychlor than flies from the laboratory colony.

Florida PCO's Meet

William O. Buettner, secretary of the National Pest Control Association, addressed a meeting of the Florida Pest Control Association held in connection with the A.A.E.E. and E.S.A. meetings. He characterized the housefly as the country's number one insect pest, principally because it is suspected of being a carrier of polio. With flies having developed a resistance to chlorinated insecticides like DDT, he expressed the opinion that preventive pest control, featuring sanitation and the use of larvicides, may be the next answer to the fly problem.

Carpet Beetle Protection

The permanence of the protective action of various insecticides when impregnated on cloths for protection against carpet beetle damage was reported on by H. Laudani and F. O. Marzke, B.E.P.Q., Savannah, Ga. After aging two years, cloths treated with 3 percent solution of heptachlor, chlordane, and BHC (6% gamma) produced a mortality above 85 percent to black carpet beetle larvae during an exposure of 28 days, while no significant mortality was obtained with the same concentration of toxaphene, DDT, methoxychlor or TDE. Concentrations of 0.5 to 3 percent inclusive of all of the above insecticides still protected the cloth against insect damage with the exception of the lower concentrations of BHC.

Repellent Studies

Field tests made in 1949 with mosquito repellents against Alaskan *Aedes* mosquitoes and sandflies (*Culicoides*) were reported by K. H. Applewhite, Department of the Army, Washington, D. C., and H. F. Cross, Orlando, Fla. As skin treatments at 25 percent concentration, bicyclo [2, 2, 1]-5 heptene-2, 3-dicarboxylic acid and *N, N*,-dipropyl-, propylester were effective for 85 minutes or more. In tests with ten repellents substituted for Repellent 6-12 in Mixture 6-2-2 only four were superior to the standard Mixture 6-2-2. Of twelve repellents tested against mosquitoes as clothing treatments on T-shirts, three gave 98 percent protection after 84 hours of wear. When impregnated into wide mesh headnets, Indalone gave the best protection. In tests against sandflies, dimethyl phthalate was the most effective of twelve repellents used as skin applications.

Israel Soap Industry

(*From Page* 34)

much as it owns, wholly or in part, some of the biggest business in the country, including Solel Boneh, the foremost building contractors. Little wonder, then, that wages are high and labor troubles few in Israel.

There is no problem here as far as technical skill is concerned. The management in the two leading plants comes from an old line of German and Russian soapmakers and technicians. The son of the man who was the first soapmaker at "Atid," the small factory founded in 1904, is today the soapmaker for Shemen. The former plant's first production chief is still Shemen's production manager today. His brother first developed the process of fat hardening with hydrogen, and Shemen now supplies most of the country with margarine from its oil hardening plant.

The Israel soap industry does not let any of its by-products go to waste; it can't afford to. The rapidly-growing dairy and poultry industries gobble up all the oilcake left over from the pressing, and a good deal more that has to be imported. Shemen's glycerine plant is the only source of glycerine for Israel.

New Atlas Deodorant

A new deodorant for use in hospitals and for such industrial uses as in soaps was announced recently by Atlas Powder Co., Wilmington, Del. The new product, which is a cationic type germicide, is also said to be adaptable as a propellant type deodorant. It is being produced in pilot plant quantities and has been tested in hospitals and in industry. It is practically odorless and is said to have low toxicity.

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Evaluation Tests

(*From Page 44*)

Specimen data sheets for reporting the tests discussed above are shown in Figures 6 and 7. The data when reported on this form shows at a glance the comparison of a rug cleaning compound with a standard material and the factors in which it is particularly weak or strong. The use of such a clear consistent procedure for analysis will be an invaluable aid for the successful development of a specialty compound of this type. The method described in this paper is not a qualitative one nor one which is intended to show with precision small differences between similar compounds. Test procedure is intended to show close differences among widely different types of detergents and give primary information in the least amount of testing time.

Bibligraphy

1. Leonard, "Rug Cleaning . . .", *Soap & Sanitary Chemicals*, April 1949.

Fine Organics in Aviation

The entry of Fine Organics, Inc., New York, into the commercial air transportation field as a supplier of chemical products for aircraft maintenance, overhaul and operation has just been announced by Nicholas M. Molner, president. John B. Moore has been appointed as manager to direct marketing and field engineering activities of the division. Fine Organics has been supplying military aircraft requirements. Its manufacturing plant is in Lodi, N. J., where the company maintains production and laboratory control facilities and scientific personnel.

New I. G. Wax Grades

New and standard grades of prewar I. G. waxes are now being imported and distributed in the United States by Wax & Rosin Products, New York, it was announced recently. Newer grades include several especially developed for self-polishing, dry-bright, water emulsion floor waxes, prices for which are under current Carnauba wax quotations.

Rex Wall Cleaner Folder

A four-page folder on its "Cleanwall" wall washing machines was issued recently by Rex-Cleanwall Corp., Brazil, Ind. Illustrated and described in the folder are the junior and senior models. Specifications and methods of use are included. In addition the folder describes cleaners and cloths to be used with "Cleanwall" wall cleaners.

DATA SHEET

Name: Soapex Home Cleaner Manufacturer: .....

Type: Built Soap Quotation: 50 cents quart

CHEMICAL ANALYSIS OF CLEANERS

A. *Wet Cleaner*

1. pH at 2.5% = 10.2
2. Total Solids: 7.5%
3. Titer (Soap): 25°C

4. Builder:

	Positive	*Negative*
SO_4	—	X
CO_3	—	X
SiO_2	X	—
PO_4	X	—

B. *Solvent or Dry Cleaner*

1. Flash Point: ..... °F
2. Type of Solvent: .....

C. *Absorbent Powder Cleaner*

1. Solvent: ..... %
2. Powder: ..... %
3. Type of Solvent: .....
4. Flash Point of Solvent: °F (If steam distillation is run)

SUMMARY: (include possibilities of chemical damage, if possible to determine) .....

1. pH too high for safety of wool in location work.
2. Probably okay for plant cleaning if warm water available for rinsing.

Figure 6. Specimen data sheet on Chemical Properties of a Rug Cleaning Compound.

CLEANING EFFECTIVENESS

	Original	*Soiled*	*Standard Cleaner*	*Test Cleaner*	*% Removed*
Water Extract	0.2%	0.8	0.4	0.5	35%
Solvent Extract (CCl_4)	0.8%	2.1	1.2	2.5	—19%
Loose Dirt	0.1%	1.5	0.4	0.5	67%

VISUAL EVALUATION

1. *Degree of Soiling Before Cleaning:*
   - Severe: .....
   - Considerable: X
   - Noticeable: .....
   - Slight: .....
2. *Brightening After Cleaning:* Test Cleaner Compared to Standard
   - Superior: .....
   - Equal: .....
   - Inferior: X

RESOIL EVALUATION

1. *Degree of Resoil in Relation to Standard:*
   - Equal: .....
   - More: X
   - Less: .....

SUMMARY AND COMMENTS:

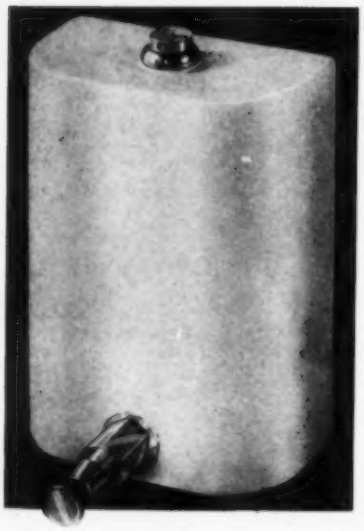
Unsatisfactory for location cleaning.

Figure 7. Specimen data sheet on Performance of a Rug Cleaning Compound.

from every angle

Moore

DISPENSERS ARE BEST



Selling Every Customer "Slant"

MOORE is bound to expand your market for dispensers and for soap! Appearance-minded customers like Moore's styling—in key with trim, modern washrooms. Efficiency-minded customers like Moore dispensers' trouble-free operation, speeding washroom service. To the economy-minded, just mention the price—for superior quality it's no higher and often it's lower.

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Sell MOORE and sell MORE soap. MORE dispensers.

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New 1950 Tanc-Typ Dispenser

New in construction, new in modern, rounded-front design, and already proving superior in heavy-duty use! A new valve's Neoprene washer won't swell to cause sticking, won't shrink to cause leaking. Body is heavier-weight 20-gauge steel. All at no advance in price—for today's value-conscious customers.

No. 500—for liquid soap

No. 550—for lather

C.S.M.A. Meeting

(*From Page* 116)

Department, District of Columbia. Methods and materials used were stressed by the speaker.

How to choose a perfuming material for insecticides, what storage problems are involved and some of background on essential oils and aromatic chemicals were explained by Dr. Arthur H. Downey of Magnus, Mabee & Reynard, Inc., New York, in an address entitled, "Importance of Essential Oils and Aromatics to the Insecticide Industry," the first paper of the insecticide division meeting.

"A well rounded program of insect control which includes, but is not limited to, the proper use of insecticides and fumigants has shown that it is possible to maintain food plants relatively free of insect infestations," according to Charles A. Clark, chief assistant for sanitation, General Foods Corp., New York. Mr. Clark made the statement in a paper bearing the title, "Trends in Insect Control in the Food Industry." He went on to point out that "satisfactory control of insects is not and cannot be obtained from the insecticides alone. Mr. Clark then proceeded to discuss specific insecticides and to what extent, if any, they are used in food processing plants. Of these, DDT use is reported on the down grade; parathion is not recommended; chlordane use is up, as is methoxychlor. "Compound 497" is not being used until further tests are made. Lindane is of interest for use in food plants, but BHC use is affected by its characteristic odor. Pyrethrum's safety is a factor in its increasing use, as well as use of mixtures of pyrethrum with other insecticides. On application, the trend seems to be away from dusts and fogs, mists, smokes, etc. There is also a trend away from "routine use" of aerosols. Contact and residual liquid sprays are finding wider use in food plants, according to Mr. Clark, who also mentioned the wider interest in safety in food plants.

In a review of the insecticide situation, past and present, M. D. Farrar, head of the department of entomology and zoology, Clemson Agricultural College, Clemson, S. C., pointed out that the "immediate problem is not one of uncovering a new toxic chemical. From the point of view of control the search should be directed toward those materials that are quite specific against an insect species. It may require considerable research and testing to uncover the right chemical, but certainly this must be kept in mind in the search for insecticides and miticides," Mr. Farrar pointed out in his paper, "Problems with Chemicals in the Insecticide Field." He further stated that "one of the most perplexing of the (insecticide) problems is the acute toxic levels at which pesticides are injurious to man, animals and plants. Chemical residues are now recognized both as an external and internal contamination of many food products." He emphasized that since all insecticide chemicals are toxic if improperly handled, care must be exercised in their application. "Unless we use these new materials safely and without injury to man, animals and plants, ill advised legislation will greatly cripple progress . . ." How to proceed in the search for new pesticides? Mr. Farrar suggested: "industry must maintain screening and testing laboratories where it can obtain basic data on new compounds. . . . Such a program will mean that industry will have a heavy investment in new products. It will also mean that only those companies with adequate funds can support research toward the development of new pesticides."

The history, chemistry, properties and use as a non-irritating mite and tick repellent of Dihydrorotenone (hydrogenated rotenone) were discussed by H. E. Whitmire of Whitmire Research Laboratories, Inc., St.

Louis, in a talk "Some Technical and Toxicological Studies of Hydrogenated Rotenone and Hydrogenated Rotenoids". In connection with his talk, Mr. Whitmire showed slides of tests with hydrogenated rotenone and rotenoid on timber workers in Alabama. According to the speaker, the results of the tick tests were satisfactory to the doctors in charge and to the officials of the company employing the men.

"Insect Taste Repellents", a paper by S. S. Block, assistant research engineer of the Engineering and Experiment Station of the University of Florida, was presented in Mr. Block's absence by Mohe Solworth of Industrial Sanitation Counselors, Louisville, Ky. Slides showing insect damage to sized textile and paper materials were a feature of the presentation. New types of repellents were mentioned.

Background on the discovery of the new rodenticide "Compound W.A.R.F. 42", was outlined in a talk by its discoverer, Dr. Karl Paul Link, Professor of Biochemistry of the University of Wisconsin. The new rodenticide, which is an anticoagulant, is now under field tests, according to Dr. Link. The Production and Marketing Administration of the U.S.D.A. is now granting permits for shipment of powders for experimental field trials by qualified operators, Dr. Link stated. He said that "W.A.R.F. 42" is one of a large series of 3-substituted 4-hydroxycoumarin anticoagulants that have arisen from his laboratories at Wisconsin, where the anticoagulant drug "Dicumarol" was developed in 1940. The material is a stable, colorless, crystalline solid with a melting point of 161° C. It is acidic and has a low solubility in water, but the sodium salt is readily soluble. Both are odorless and tasteless and are made for the W.A.R.F. to conform to a high standard of purity to insure successful rodent baiting. The free acid is used in solid baits, the sodium salt for water solution (fountain) baiting. As part of his talk, Dr. Link showed slides of various animals to which the anticoagulant rodenticide had been fed.

The concluding paper of the insecticide division meeting was that by D. Glen Crabtree, biochemist of the Wildlife Research Laboratory, Fish and Wildlife Service, U. S. Department of the Interior. The paper, titled "A preliminary Study of the Raticidal Potentialities of Wisconsin Alumni Research Foundation Compound No. 42 (3-(1 phenyl-2 acetylethyl)-4-hydroxycoumarin)", will appear in the February issue of *Soap & Sanitary Chemicals*.

THE "Use of Chelating Agents in Liquid Potash Soaps" by John J. Singer of Bersworth Chemical Co., Framingham, Mass., was the opening paper at the soaps, detergents and sanitary chemicals division meeting. Mr. Singer's paper dealt with "Versene", the sodium salt of ethylene diamine tetra acetic acid, which is used as a water softener in conjunction with soap products. The first section of the paper dealt with the use of "Versene" in solid soaps, the second part with its application to liquid soaps. Mr. Singer also described a new compound which has the property of inactivating ferric iron as well as the common divalent metals. It is particularly useful in liquid soaps which are diluted with water containing appreciable amounts of iron, according to the speaker. The use of chelating agents in synthetic detergents was also described.

The use of plastic coatings to protect chemical plant equipment was described in a paper, "Plastic Coatings for Chemical Process Equipment" given by Howard C. Woodruff of Corrosite Corp., New York.

"The Surface Active Fatty Amides", "probably the one basic and original American contribution to synthetic detergent chemistry", as they are referred to by the author, were the subject of a paper by H. W. Zussman of Alrose Chemical Co., Providence, R. I. In his talk Mr. Zussman filled in some of the history and chemical background of these fatty alkylolamides, which are of only minor importance in the general surface active agent field. They are widely used in conjunction with other detergents and wetting agents, however. Their foaming properties, hard water compatibility, detergency, and use in emulsification and soap clarification were also discussed in some detail.

In the paper, "Evaluation Tests: The Key to Chemical Specialty Developments" by E. A. Leonard, assistant chief, Product Engineering Laboratories, Alexander Smith & Sons, Yonkers, N. Y., it was pointed out that "It is the exception rather than the rule that industrial products can be thoroughly and reliably evaluated by established and uniform test methods." Mr. Leonard's paper begins on page 42 of this issue.

The use of antiseptic agents in soaps for on-location rug cleaning was covered in a paper, "The Bug in the Rug" by Edward Salas of Nuodex Products, Inc., Elizabeth, N. J. The speaker described types of bacteria in rugs, conditions causing their growth and methods of control.

In the paper entitled "Psychophysical Aspects of Gloss", Daniel Smith of Interchemical Corp., New York, discussed the factors involved in evaluating gloss. He suggested that a possible test procedure for specifying the efficiency of waxes as "gloss agents" would have to take into consideration the angular apertures of the sources and receiver, the angle or angles of illuminating and viewing, the standard for instrument calibration, the test surface to be employed, the methods for applying the wax to the test surface and an arithmetical procedure for obtaining a numerical index from the data obtained by the measurements.

Also presented at the waxes and floor finishes division meeting was a paper entitled, "Testing of Water Resistance and Removability of Floor Waxes" by Bayard S. Johnson, Franklin Research Corp., Philadelphia. Using the Gardner straight line washability tester, he presented data on the effect of varying concentrations of soap used in scrubbing solutions and the effect of the number of scrubs of machine on wax removability. Mr. Johnson pointed out that there were too many variables to justify drawing any general conclusions.

Fundamental considerations in measuring gloss, instruments used and

Oppenheimer Outlines C.S.M.A. Aims

OUR Association is entering a most crucial period. With its enlarged scope, our activities are now directed towards beneficial action for the members of a group of five or more related industries. Certainly, we will do more for our old members, especially those whose products go beyond the fields of insecticides and disinfectants. But more important, our facilities will now be geared to serve members and prospective affiliates whose activities may only be concerned with one of our divisions. Any firm which makes an aerosol of any kind, a disinfectant, an insecticide, soap, a detergent whether synthetic or not, a floor wax, or sealer, or any related chemical specialty has a place in our midst and a stake in our endeavors.

We want and need more good members. Our Membership Committee, will shortly launch a big drive. It is our hope that you will consider yourselves members of that committee and help "carry the ball"! There are many companies that belong with us.

Our increased aims will require additional committee work on marketing as well as on scientific subjects. To function properly, all members, old and new, will be asked to participate in these activities. When this call comes, I will appreciate your immediate response.

The pioneer spirit of NAIDM will now carry on to bigger and better fields through CSMA. Ours is a big job to do. Let's work together and go places.

physical aspects of the problem were touched on by Dr. Richard S. Hunter of Henry A. Gardner Laboratories, Inc., Bethesda, Md. His paper carried the title, "Gloss Measurement of Self-Polishing Waxes". Measurements at a 60° angle seem to be closest to what the average person views when looking at a polished surface, he said, but added that there are indications that measurements taken at a 75° angle might be even better. He showed charts of five types of floor surfaces which had been measured at 60, 75 and 85 degrees.

A lengthy discussion of the Bureau of Federal Supply's proposed revision of its specification 784 for water emulsion floor wax was held on the evening of Dec. 5. Representatives of the government agencies involved in the preparation of the specification and wax industry members reviewed in detail the sections of the proposed specification. The feeling among industry representatives was that too much attention was being placed on composition of the wax and not enough on performance. Industry representatives also seemed to feel that if they made a wax conforming to some of the requirements of the proposed specification, other provisions could not be met.

A further hearing was held Dec. 8, which is reported more fully elsewhere in this issue. (See Page 157.)

Two divisional meetings were held on the morning of Dec. 6. One was a joint meeting of the soaps, detergents and sanitary chemicals division and the waxes and floor finishes division, the other was a meeting of the insecticide division. At the meeting of the latter group, John H. Fales of the Bureau of Entomology, U. S. Department of Agriculture, Beltsville, Md., reported on the "Effectiveness Against House Flies, Mosquitoes and American Cockroaches of Aerosols Containing Synthetic Pyrethrin-type Ester". His talk was based upon a paper of that name prepared by Mr. Fales, R. H. Nelson, R. A. Fulton and O. F. Bodenstein of the U.S.D.A. Their findings are summarized as follows:

The completely synthetic ester of cinerin I was shown to be as toxic to house flies as the natural pyrethrum extract in experiments using kerosene sprays and Freon-12 aerosols in a Peet-Grady chamber.

At low concentrations the synthetic ester as a spray was relatively less effective to mosquitos when compared with natural pyrethrum extract but gave high performance at practical concentrations.

The synthetic ester as an aerosol gave low kills of cockroaches in comparison to the natural extract.

Distillation of the synthetic ester and storage as an aerosol caused no change in effectiveness to house flies.

DDT resistant flies showed some resistance to the synthetic ester.

The results of combining the synthetic ester with synergists in aerosols against house flies showed that *n*-propyl isomer was slightly more effective than piperonyl butoxide, and sesame oil extractives were less toxic.

The synthetic ester was equally as effective as natural pyrethrum extract in DDT aircraft type of aerosols.

In 37 psi Freon aerosols containing DDT the synthetic ester was as effective as natural pyrethrum extract.

The methyl allyl ester made with natural acid was equal to natural pyrethrum extract and the completely synthetic ester in aerosols and sprays against house flies.

The allyl compound made with natural acid gave the best performance using mosquitoes and house flies. In DDT aerosols both natural acid esters at .4% were equally as effective as pyrethrum extract and pure natural pyrethrins in house fly tests but were non-effective to cockroaches, except when added at 1% in addition to the pyrethrum extract and DDT. When added at 4% to the aircraft type of pyrethrum extract and DDT aerosol, the most toxic usable formula resulted, as was proven in house fly tests.

L. S. Henderson of the Bureau of Entomology & Plant Quarantine, U.S.D.A. discussed "Current Moth-Proofing Solutions". He gave a resume of present trends, with particular emphasis on compounds used to impregnate fabrics.

In a review of recent information on the insecticidal value and toxicology of insecticides for livestock pests, E. F. Knipling of the U.S.D.A., Agricultural Research Administration, Bureau of Entomology and Plant Quarantine, recommended lindane and toxaphene as sprays on livestock and other dairy animals, particularly for the control of lice, ticks, horn flies and sheep ticks. Further studies were made with these two insecticides and chlordane and other materials are necessary to obtain more information to determine if and for what purposes they might be used safely in the livestock pest field.

The "Relation of Insects to the Spread of Human and Animal Disease" was discussed in a paper of that name by F. C. Bishopp, assistant chief, Bureau of Entomology & Plant Quarantine, U.S.D.A. He stated that although control of many diseases of man and livestock can be effectively combatted, largely by the proper use of insecticides, people are often more

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interested in measures which will relieve them of annoyance from insects regardless of whether they carry disease." In addition to the use of insecticides, Mr. Bishopp recommended that sanitary measures are a necessary adjunct in the fight against insect vectors of disease. Insects, their relationship to disease and methods of controlling them were mentioned in Mr. Bishopp's address.

The joint session, which featured product application and use, was opened with a discussion by Julian O. Heppes, Tile-Tex Division, Flintkote Co., who spoke on the subject of "Asphalt Tile". After discussing what the product is, how it is made and the types of cleaning materials that should not be used on it, Mr. Heppes stated that "mild soaps with a limited pH are the best and safest type of cleaning agent that can be used on asphalt tile flooring." The "type of cleaner is an important factor", according to the speaker, "but it is equally important that the proper procedure be used in washing an asphalt tile floor." He stressed the importance of rinsing with plain, cold water "just as soon as the cleaning solution has been effectively employed to loosen the dirt from the surface of the floor." A specification covering a cleaning agent and a water wax for asphalt tile flooring is now being developed by the Technical Committee of the Asphalt Tile Institute. Waxes for asphalt tile flooring should be of the water emulsion type and should be applied according to the recommendations of the manufacturer, Mr. Heppes said. Sweeping compounds, should always be of the wax-treated type, not the oil base type, he stated.

The work of the Rhode Island Agricultural Experiment Station in its floor research program was described by Mrs. Blanche M. Kuschke of Rhode Island State College. In her paper, "Home Floor Problems", Mrs. Kuschke told how the Station's program was initiated as a result of requests by many home makers for information on floors and their maintenance.

The place of machinery in helping to maintain floors was discussed in a talk, "Modern Floor Maintenance Equipment, Floors and Floor Care" by Joseph Sassano of General Floorcraft, Inc., New York. In addition to describing machines available and their advantages over hand methods, Mr. Sassano enumerated methods of maintaining floors, the types of flooring and materials used. "Standardization in many phases of floor maintenance practices is rapidly taking place. Greater cooperation among all manufacturers of floor coverings, materials and machines will lead to healthier and more profitable volume of business for all of us in this industry", the speaker concluded.

"Scrubbing Soaps for Soft Floors" were discussed by Ralph B. Trusler of Davies-Young Soap Co., Dayton, O. He pointed out that while floors may be scrubbed either manually or mechanically, the same kind of cleaning material can be used with either method. He mentioned soaps that can now be supplied in grades that will function at relatively low alkalinity through the use of chelating agents. Mr. Trusler also listed the methods for cleaning various types of floor surfaces.

The concluding two talks at the joint soaps and wax session included an informal presentation on "Application by Mop of Self-Polishing Waxes" by Frank J. Pollnow, Jr., of Vestal, Inc., St. Louis, and another, "Maintenance of Felt Base Linoleum, Plastic Floors and Wall Linoleum" by R. K. Austin of Congoleum-Nairn, Inc., Kearny, N. J.

The concluding session, a general one, the afternoon of Dec. 6, opened with a report of the nominating committee, and the election of officers, listed earlier in this report.

"The Application of the Federal Food, Drug and Cosmetic Act to Sanitary Chemicals" was covered in a paper of that title by John L. Harvey, director, Regulatory Management, Food and Drug Administration, Washington, D. C. In his talk, Mr. Harvey pointed out that the Food and Drug Administration is concerned with chemical specialty manufacturers' products wherever they are subject to the Federal Food, Drug and Cosmetic Act in themselves and also because the use of many of these products may have an effect upon the compliance or noncompliance of food and drug products. The "use of insecticides, fungicides, disinfectants and similar sanitizing agents in food and drug manufacturing plants, and upon and around and in conjunction with the production and storing of foods and drugs is designed to accomplish and does accomplish a most sanitary purpose. However, since the primary function of sanitizing agents is to kill living organisms of one kind or another, it is axiomatic that their careless and improper use is attended by hazard to the health of human beings and other animals", Mr. Harvey stated. In distinguishing between the applications of the Food, Drug and Cosmetic Act and the Economic Poisons Act, Mr. Harvey said that "the intended use determines whether a product is subject to the Food, Drug and Cosmetic Act. Articles used as food or a component of food are defined as foods; articles intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease in man or other animals are defined as drugs. Germicides that are intended for use on inanimate objects are not regarded as coming within the scope of the Federal Food, Drug and Cosmetic Act, whereas germicides, more commonly referred to as antiseptics, which are intended for use on the animal body are subject to and regulated by the Federal Food, Drug and Cosmetic Act", the speaker pointed out.

Ten steps in "Developing and Selling New Products in the Sanitary Chemical Field" were outlined in a talk by that name by Gustav E. Larson, marketing division, Office of Domestic Commerce, U. S. Department of Commerce:

"1. Organize your company for the job of finding and appraising new product suggestions.

2. Learn where and how to look for new product ideas in the field of your interest. Alert your management staff to such possibilities.

3. Arrange to receive suggestions for new products in a regular way from the sources you decide may bring good results for your company.

4. Assemble and examine many new product possibilities so you will have a pool of many good ideas to make a selection from.

5. Study the ideas of merit carefully

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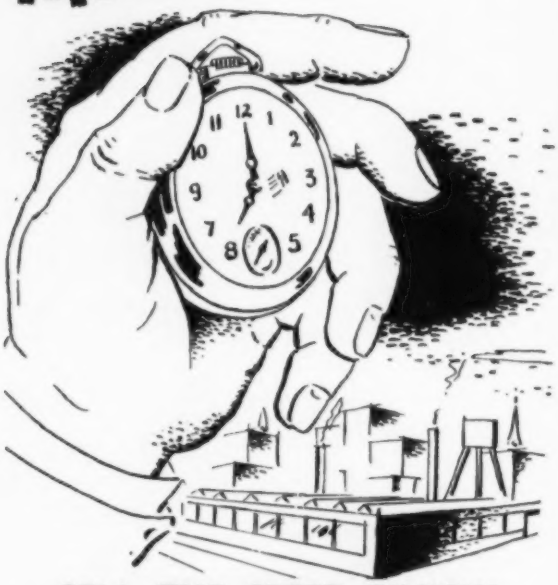

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Three popular sizes, 6, 8 and 11 gallon . . . Standard and Heavy grades. Corrugated and desired smooth side types. WRITE FOR BULLETINS No. 8 and No. 10.

← GARBAGE CANS NESTABLE TYPE
Large sturdy cans in 20, 22, 24 and 32 gallon sizes. Standard, Heavy and Heavy Duty grades. WRITE FOR BULLETINS No. 22, No. 24, No. 32 and No. 42.

OILY WASTE CANS →
UNDERWRITERS' LABORATORIES APPROVED. Foot and hand-operated types. Full-bodied construction, positive gravity-closing cover among many unusual features. WRITE FOR BULLETIN No. 18.

Manufacturers of Wash Tubs, Rubbish Burners, Steel Baskets. *Write for descriptive literature.*

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before proceeding with development work. Use checklists of points to consider to guide such study.

6. Obtain the necessary predevelopment facts to assure design of a good product.
7. Test the product in a laboratory and under actual use conditions before releasing it to the market.
8. Select a name and a package which will help sell the product at a profit.
9. Market test your item in test areas before proceeding with large scale marketing programs.
10. Make the improvement of your product and your marketing plan a continuing company objective."

The concluding speaker of the meeting was Walter Johnson, regional vice-president of American Air Lines, New York, who spoke on the subject of "Air Transportation for Salesmen and Air Freight and Express". He described the advantages of air travel and shipping by air and defined the term, "airconomy".

The report of the resolutions committee, the final business of the session, was read by Earl Brenn of Huntington Laboratories, Inc., Huntington, Ind. Among the resolutions presented were those expressing appreciation to retiring president Gordon M. Baird, to program chairman Melvin Fuld, to H. W. Hamilton, secretary, to James E. Ferris, chairman of the entertainment committee and to government officials and units for their cooperation and participation in the program. The cocktail party and banquet the evening of Dec. 6, concluded the meeting.

One of the highlights of the meeting, scheduled as a post-convention trip, was the all-day tour of the U. S. Department of Agriculture's Agricultural Research Center at Beltsville, Md., on Dec. 7. Over 40 persons made the trip to the 15,000 acre "farm" as it is called. Visitors saw biological and chemical research facilities for testing and developing of pesticides.

Testing Quaternaries

(*From Page 125*)

commercial cresylic acid soap emulsion germicide. Thus, the value of a single determination on this chemical by the method can be considered as considerably less than for a single determination with either phenol or the cresylic acid soap emulsion germicide.

As diluted in distilled water, the test dilution for quaternary ammonium germicide 1 ranged in pH from 5.7 to 6.3. Inasmuch as previous studies indicated that some of the erratic results with this product in the phenol coefficient method were due to erratic ionization in the serial dilutions, tests on this particular product were repeated by using sterile Coleman buffer salt solutions at pH 8.0 and pH 7.0. Actual pH determinations on the dilutions used in the tests indicated that the final dilutions employed possessed a standard deviation of + 0.2 pH in both instances. Curves plotted from the results of these tests are also shown in Figure 2. It can be seen that the sigmoid-shaped character of the probability curve secured on the water dilutions at pH 6.0 ± 0.3 is retained in both instances. At pH 7.0 ± 0.2, the curve is more vertical than the one secured at the lower pH level and at pH 8.0 ± 0.2, the curve assumes an almost vertical position. As the curve becomes more vertical, the size of the occasional survivor area "B" also decreases, although the size of the accidental death zone "A" appears to remain relatively large. The actual zero point with both of these curves is apparently somewhere between 1-7,500 and 1-10,000. Thus, there is a demonstrated tendency for this product to give a more sharply defined and slightly lower end point as the pH value is increased from 6.0 to 8.0. Results secured in individual determinations become more easy to duplicate and the value of a single determination on this chemical by the method becomes greater.

Attention should be called to the fact that the scale used for the base lines of Figure 2 and Figure 3 is appreciably smaller than the base line scales used in Figure 1. This should be considered in making all direct comparisons.

In Figure 3, the curve drawn in as a continuous line through the solid black circles represents the results secured with quaternary ammonium germicide 2 of Table 1. Here the sigmoid-shaped curve is long and it slopes acutely to the right. Some negative results are secured on subsamples at all dilutions up to 1-37,500, yet the highest dilution at which no subcultures would show growth appears to be some place between 1-10,000 and 1-12,500. This is approximately half the dilution of 1-22,500 which would be necessary to justify the phenol coefficient claim of 250 made by the manufacturer. A straight line drawn through the 50 percent point of this curve as a common tangent to both ends of the curve intersects the base line scale at a value of approximately 1-25,000. Thus, it would seem that the manufacturer has in this case also a mathematical justification for the phenol coefficient claim of 250 which is made. The value of this claim for arriving at a safe use dilution by the conventional procedure seems exceedingly questionable. For, here again, the ratio of the length of the base line of the accidental death area "A" to the length of the base line from zero to the mean killing dilution is more than twice as great as the similar ratios for phenol and the cresylic acid germicide, and the length of the zone itself is 625 times as great as the similar zone for phenol and 125 times as great as with the commercial cresylic acid soap emulsion product.

The zone of occasional survivors at the base and to the left of the tangent is large and long with this product; and the tangent forms a very acute angle with the base line, although the area of accidental deaths is not large. The factors appear to be great enough in this particular case to make the result of any single determination by the method very indefinite as far as determining an actual germicidal end point is concerned.

All attempts to secure a more sharply defined end point with this product by making the dilutions in the presence of sterile buffer solutions prepared with Coleman buffer salts at pH levels ranging from 5.0 to 10.0 failed. Curves constructed from results secured on dilutions at pH 5.0 ± 0.3, pH 8.0 ± 0.2, and pH 9.0 ± 0.2 are included in Figure 3. It can be seen that the slopes of these curves do not vary appreciably from the slope of the curve secured with the commercial sample diluted in water. The difference in the behavior of quaternary ammonium germicide 2 from quaternary ammonium germicide 1 in this respect cannot be explained. This result merely emphasizes the diverse nature of chemicals of this type and the danger of drawing general conclusions based on results secured with any single quaternary ammonium salt.

(*To be concluded*)

MGK Acquires 264

McLaughlin - Gormley - King, Minneapolis, announces that it has acquired U. S. Patent No. 2,476,512 covering the insecticide synergist 264, from Van Dyk and Co., Belleville, N. J. MGK will hereafter offer this synergist which has been approved for use in aerosol bombs and other insecticides. MGK has been investigating No. 264 for more than a year. Important new uses for this synergist in combination with natural and synthetic insecticides have been developed. No. 264 has been found especially effective in fortifying the allyl analog of Cinerin I for the control of cockroaches as well as other household insects, as discussed by Dr. J. B. Moore, in a paper read before the AAEE convention in Tampa in December.

New Armour Emulsifier

A new cationic emulsifier for chlordane and other insecticides was developed recently by the chemical division of Armour & Co., Chicago. An oil soluble quaternary ammonium compound with excellent surface active properties, it bears the trade name "Arquad 2C".

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New Mich. Bleach Plant

Opening of a plant for the manufacture of "Robin Hood" cleanser, a liquid bleach, was announced recently by H. Homer Marsh of Franklin, Mich. The new firm will be located at 310 Perry St., Saginaw, Mich. Howard Ellis is the new manager of the plant, which will distribute through jobbers in northeastern Michigan. Mr. Marsh is owner of H. Homer Marsh Laboratory, Inc.

Ammonia

(*From Page* 41)

and his co-workers (26) state that they have recommended that people brush their teeth with the above dentifrice after each meal, if possible, and before retiring. The mouth is not to be rinsed with water following the brushing because water will dilute and wash away the active agents before there is an opportunity for them to exert an influence on the oral flora. If the individual insists on rinsing the mouth to get rid of any debris that has been brushed off the teeth, the following mouth rinse may be used so that the effective levels of ammonia and urea will not be diluted too rapidly:

Dibasic ammonium phosphate	50.0 Gm.
Urea	30.0 Gm.
Glycerine	100.0 cc.
Alcohol	40.0 cc.
Soluble saccharin	1.0 Gm.
Menthol	0.4 Gm.
Amaranth solution, U.S.P.	2.0 cc.
Sodium	1.0 Gm.
Distilled water, to make	1000.0 cc.

At least one liquid preparation based on this formula is on the market and there may be others. The literature of one company licensed by the Foundation advises, however, that a small portion of the powder be added to water and this be used as a mouth wash. According to a survey (29) published a few months ago, there are several ammonium-based mouth washes on the market. One manufacturer provides purple tablets, to be dissolved in water, containing dibasic ammonium phosphate and urea, plus flavoring.

The Henschel formula contains a much higher proportion of urea. This is understandable in view of the theory upon which the action of this dentifrice is based. It is believed that the urea present in this ammoniated dentifrice tends to soften and change the substances which form the plaques on the teeth. These plaques (under which the decayed areas are frequently found) harbor bacteria and acid and prevent the underlying tooth structure from being washed and protected by the saliva. After the plaques have been changed by the urea, they form compounds which combine with the ammonium phosphate. This, in turn, produces a buffer which neutralizes the acid formed by the bacteria and thus creates an environment that is inimical to these organisms.

After testing a number of combinations, the optimal formula was found to be as follows:

	per cent
Carbamide	22.5
Dibasic ammonium phosphate	5.0
Bentonite	5.0
Precipitated calcium carbonate	63.2
Sodium lauryl sulfoacetate	3.0
Saccharin sodium	0.3
Volatile oil	1.0

In contrast to the Foundation product, it appears that the above Henschel formula is being dispensed under only one brand name. However, this product is one of the leaders in the field of ammoniated dentifrice powders. There is no corresponding mouth wash, but as remarked by Kopely (23) the powder can be diluted with water as a rinse and toothbrush dip. The manufacturers of the commercial product suggest that a rinse made by adding some of the powder to water will enhance and prolong the action of the urea.

Results of a three-year test with this preparation are quite interesting and rather indicative. For one thing, the report of Henschel and Lieber (30) gives the results as actual percentages of caries reduction than as reduction of L.a. counts. They reported that records obtained on one group of 100 patients showed that new decayed, missing or filled teeth occurred at an average rate of 2.39 per year for an eight-year period during which dentifrices of the usual type were used. This was considered as the control period. The same group of 100 people then used the Henschel formula dentifrice for three years. During this period, decayed missing or filled teeth developed at a rate of 1.55 per year. This, of course, is a decrease of 35.2 per cent. At the same time other series of tests and comparisons were made. These also indicated benefit from the use of the ammoniated dentifrice.

Ammoniated Tooth Pastes

DURING recent months several ammoniated dental pastes have appeared on the market. Since their successful production depends upon the solution of a number of problems, particularly that of stability, considerable curiosity exists with respect to formulation and manufacture. For some time the manufacture of ammoniated toothpastes was one of the best kept secrets of the industry. Now, however, some information is coming out of the laboratories of producers and of raw material suppliers. However, as one expert has remarked, even if formulas are available, their successful use for production purposes still depends upon a great deal of experience and plain "know how."

It was recognized quite early that an ammoniated tooth paste would require an excipient that would prevent hydrolysis with the release of ammonium ions. Discussions with those who are concerned with the production of these tooth pastes reveals that glycerine or combinations of glycerine with other materials are being used as the excipients. Flavor is another problem in the production of these new dentifrices and, from what can be gathered, is solved mainly by trial and error methods.

There still is a great deal of reticence concerning the composition of ammoniated tooth pastes. However, an indicative formula has been made available from the laboratories of one of the large chemical houses. This, it is felt (31), will be found to be both stable in its physical properties as well as effective in actual clinical tests. While it cannot be said just how closely some of the commercial pastes follow this formulation, it will at least pro-

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vide a good starting point for those interested in this type of product. This tentative formula is as follows:

	per cent
Tricalcium phosphate (Victor)	26.67
Glycerine	45.40
Water	15.40
Flavoring	0.58
Gum tragacanth	0.96
Saccharin	0.10
"Nacconol LAL"	2.89
Diammonium phosphate, powdered FF	5.00
Urea (100 mesh)	3.00

Allow the gum to expand in the water at room temperature for 30 minutes, then add the glycerine and mix well. To this solution slowly add the tricalcium phosphate and mix well. Mix in the remaining constituents in the following order: Saccharin, flavoring (peppermint), diammonium phosphate, urea, "Nacconol." After adding the last ingredient mix no longer than necessary to obtain complete distribution.

It is said that some of the available tooth pastes based on the Foundation formula have maintained the established 5:3 ratio of dibasic ammonium phosphate and urea, while others have raised it to almost double the original quantity. In the literature of the organization working with the Henschel formula, however, it is stated that the tooth paste contains 13 per cent of urea and three per cent of dibasic ammonium phosphate. This, it is explained, approximates the dosage provided by the powder, because of the larger amount of tooth paste (by weight) used by the average person. This tooth paste also contains a chlorhydroxy phenyl compound which acts both as a preservative and antiseptic.

Other ammoniated tooth pastes are on the market. Indeed it is reported (29) that one such product has been sold locally since 1941. It is based on the research of Grove and Grove (32), who found higher ammonia levels in the saliva of caries-immune persons than in the saliva of people with dental caries.

Before concluding mention should be made of the fact that ammonia is also a useful agent for the care and cleaning of artificial dentures. For example, a denture cleaner can be made from (5):

Calcium carbonate	400.0 parts
Powdered hard white soap	120.0 parts
Ammonia water	240.0 parts
Glycerine	200.0 parts
Sassafras oil	40.0 parts
Saccharin	0.2 part

Much simpler and well recommended (33) is the use of a one per cent solution of ammonia water for cleaning dental prosthetic appliances by immersion. This can be made by diluting one part of strong ammonia solution with 30 parts of water.

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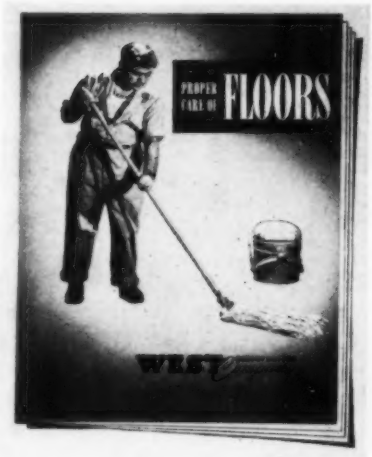

West Floor Care Brochure

A complete discussion of all types of floors and floor surfaces is presented in a new brochure, "The Proper Care of Floors", issued recently by West Disinfecting Co., Long Island City, N. Y. The 32-page, illustrated booklet, is divided into two sections. The first covers the three aspects of floor preservation: cleaning, sealing and maintaining. Part II is a treatise on all types of floor surfaces and methods of maintaining them. A chart on floor preservation appears as a two-page spread in the second section. Listed are many types of surfaces, and the kinds of cleansers, sealers and maintainers to be used. Covering capacities of the company's floor maintenance products are presented in chart form.

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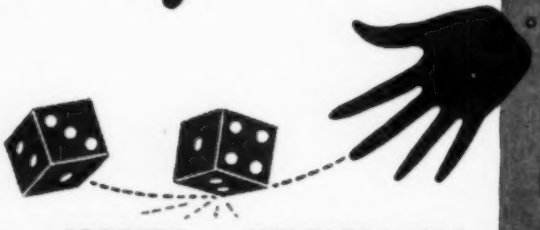

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TRADE NEWS

Hollingshead Names Lukens

William H. Lukens, formerly vice-president in charge of export sales, was recently appointed general sales manager of R. M. Hollingshead Corp., Camden, N. J. Fred Lee has been appointed industrial sales manager succeeding Oliver A. Hahne, who has left the company. Mr. Hahne was appointed industrial sales manager early last year. Mr. Lee previously was in charge of aviation sales. Alfred Moore, who was formerly chief chemist has been placed in charge of new products research. He developed the company's aerosol wax product. Ray Kembring has been advanced from the post of control chemist to director of wax research. Orville Tims is now purchasing agent for Hollingshead.

Higburg Leaves Reilly Tar

William Higburg, for the past 30 years with Reilly Tar & Chemical Corp., Indianapolis, Ind., resigned his position as general sales manager Oct. 31. He has not announced his future plans but will probably do so early in January.

To Make German Pesticides

Formation of a jointly owned subsidiary company to produce and market insecticides developed by the Germany concern Farbenfabriken Bayer of Leverkusen and Elberfeld, Western Germany, was announced recently by Geary Chemical Corp., New York, and Pittsburgh Coke and Chemical Co., Pittsburgh. The insecticides are to be made available for manufacture and distribution in the United States under the terms of a contract between Bayer and Geary Chemical Corp. and approved both by the American and British occupation authorities in Western Germany.

Pinckard Joins Hyman

Dr. J. A. Pinckard, plant pathologist, at one-time connected with Rohm & Haas Co., Philadelphia, recently joined Julius Hyman & Co., Denver. He is a Ph.D. from the University of Wisconsin and has served as plant pathologist with the Virginia, North Carolina and Mississippi Experiment Stations. He is a member of the Association of American Economic Entomologists, the American Chemical Society and the American Phytopathological Society. In his new capacity he is screening new bactericides, fungicides and nematocides being developed in the company's laboratories.

J. A. PINCKARD

Acquire Tanglefoot Co.

Acquisition of Tanglefoot Co., Grand Rapids, Mich., by John M. and Nicholas H. Battjes, who, since early last year have been operating Tree Tanglefoot Co. at the same location as Tanglefoot Co., was announced recently. John M. Battjes is president, Mrs. Jessie F. Battjes is vice-president and Nicholas H. Battjes is secretary and treasurer. The officers constitute the board of directors.

Tanglefoot Co., organized by Otto and William Thum in 1885, operated for many years as O. & W. Thum Co. Later the name was changed to Tanglefoot Co. The company's principal product over a period of 50 years has been flypaper. The Tanglefoot company will confine its activities for the present to the production and distribution of insecticides and sprayers from the same location at 314 Straight Ave., S.W., Grand Rapids. Tree Tanglefoot Co. has been manufacturing a sticky vegetable compound for banding of fruit and shade trees for protection against climbing insects. The firm's operations will continue as in the past.

Leroy C. Stewart, below, is head of the sales office just opened in Atlanta, Ga., by Dow Chemical Company, Midland, Mich. He was formerly of the Washington office.

N.J. PCO Course Jan. 14-16

The annual short course of the New Jersey Pest Control Association will be held at Rutgers University, New Brunswick, N. J., Jan. 14-16. Dr. Ralph Heal will represent the National Pest Control Association and will participate in the conference. The eighth annual Canadian Pest Control Operators' Conference will be held at the University of Montreal, Feb. 20-22.

Gast Lease New Site

P. B. Gast and Sons Co., Grand Rapids, Mich., manufacturers of sanitary chemicals, janitor supplies, heavy chemicals, etc., recently announced the signing of a long term lease on the bankrupt plant of Expert Industries, Inc., in Grand Rapids. The plant is located on a three-acre site served by a double rail siding. The factory building consists of three floors and basement containing 79,000 square feet of floor space. The firm plans to spend $5,000 on new equipment and improvements. It will give up its present offices and three warehouse buildings that provide about 108,000

square feet of floor space to concentrate its operations in the newly leased plant, according to Waldemar P. Gast, president. P. B. Gast and Sons employs 30 people and operates a fleet of six trucks.

The company was established in the early 1900's by the late P. B. Gast, a soap maker and one of the first distributors for Wyandotte Chemicals Corp., Wyandotte, Mich. His three sons are officers of the company. They include Waldemar, president; Fred C. Gast, vice-president; R. A. Gast, treasurer. In addition, Mrs. Helen Gast Jacoboice is secretary and Mrs. Evelyn Gast Ludwig, assistant secretary.

New Bobrick Dispenser

Bobrick Manufacturing Corp., Los Angeles, has just announced the addition of a new, low-price, chrome plated, metal push-up dispenser to its line of liquid, lather and powder soap dispensers of wall type and gravity feed systems. The new "Bobrick 18" push-up liquid soap dispenser features a heavy metal, one-piece, chrome plated, highly polished body. It is filled by swiveling over the globe, which is then unscrewed from the base and the liquid poured in. When the filled globe is screwed back into the body and swung into the upright position, the body automatically locks in place. The vacuum feed valve, claimed to be leak proof, cannot be stolen from the dispenser, according to the maker.

Bobrick's New Model 18

SOCMA Elects Moody

Sidney C. Moody, general manager of Calco Chemical Division, American Cyanamid Co., Bound

SIDNEY C. MOODY

Brook, N. J., and vice-president of Cyanamid, was elected president of the Synthetic Organic Chemical Manufacturers' Association, at the annual meeting at the Commodore Hotel, New York, Dec. 7. He succeeds Dr. Elvin H. Kilheffer, who retired last February from his position with E. I. du Pont de Nemours & Co. Other officers elected include: first vice-president, Wyly M. Billings of Hercules Powder Co., Wilmington, Del.; second vice-president, Eric C. Kunz of Givaudan-Delawanna, Inc., New York, treasurer; Clayton S. Shoemaker, Dow Chemical Co., New York. Elected to the board of directors were: Victor E. Williams of Monsanto Chemical Co., New York and R. W. Hooker of Hooker Electro-Chemical Co., New York.

Named in Powell Shifts

The transfer of some of its personnel to new duties in other locations as part of its new coast-to-coast regional sales and service program was announced recently by John Powell & Co., New York. Harold Straube, long associated with the company as assistant sales manager, opens a sales office in the Huntsville, Ala., plant. He is in charge of all sales operations in the Southeast. The Powell plant and warehouse in Huntsville was acquired last year. John Stoddard has been appointed assistant sales manager, with headquarters in New York. He is responsible for all sales not handled by the new regional sales offices. Morton Bader has been named as chief chemist at Huntsville, and his duties include the creation and development of a new and modern entomological laboratory. Paul Williams, formerly a member of the Powell sales staff, has been transferred to the company's enlarged organization in Chicago.

Under the new program for expanded service and distribution the Powell New York plant is concentrating on servicing the Northeast. The warehousing facilities in Chicago serve the Middle West and the present Fort Worth stocking point is the central distribution agency for the South and Southwest.

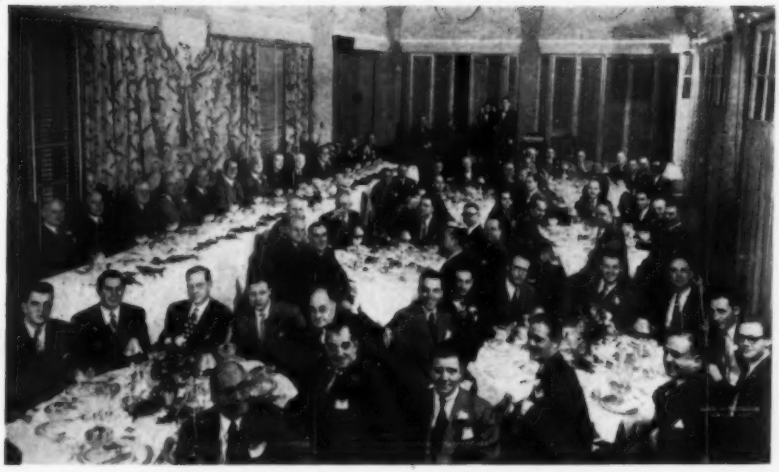
Steadman Names Hukill

F. W. Steadman Co., New York, recently announced the appointment of Hukill Chemical Co., Cleveland, as its sales representative in the state of Ohio on its complete lines of waxes for floors, automobiles, shoes, textiles and the general trade.

New Ferguson President

Robert C. Ferguson, previously executive vice-president and treasurer, was recently elected president of J. L. Ferguson Co., Joliet, Ill. He succeeds H. Lyle Greene, who resigned. J. Lee Ferguson, father of the new president and founder of the firm, continues as board chairman. P. A. Steed is vice-president and director of sales.

ROBERT C. FERGUSON



Photograph above was taken at MM&R Trade Press dinner.

MM&R Dines Trade Press

A dinner for representatives of the trade press was given at the Hotel Astor, New York, Nov. 22, by Magnus, Mabee & Reynard, Inc., New York. More than 100 guests were present. A cocktail party preceded the dinner, whose main course included turkey, supplied from the farm of Percy C. Magnus, MM&R's president. Entertainment following the dinner was provided by Mimi Benzell, of the Metropolitan Opera Company and by Myrus, clairvoyant, currently appearing at the Cotillion Room of the Hotel Pierre.

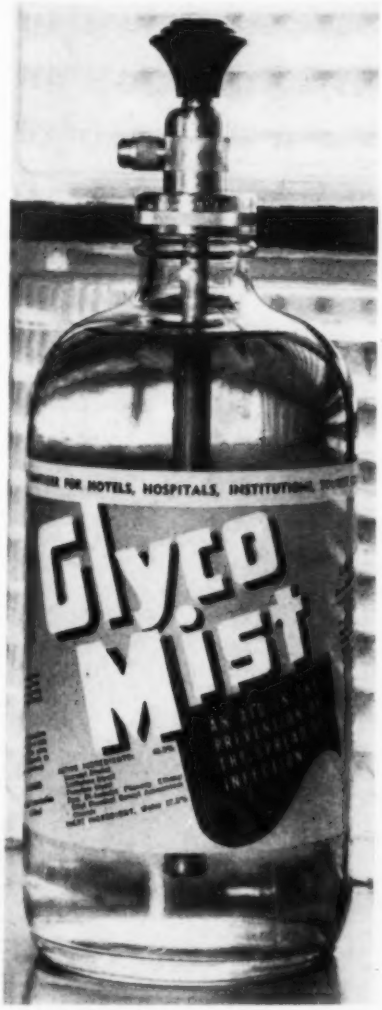
NSSA Show Sold Out

The 1950 convention and trade show of the National Sanitary Supply Association, to be held Sunday through Wednesday, May 7, 8, 9 and 10, at the Stevens Hotel, Chicago, is now sold out, it was announced recently. The 1950 show is expected to be the largest ever held by the N.S.S.A., with more exhibitors displaying than ever before and attendance expected to exceed all previous marks.

Harry Z. Cohen is Dead

Harry Z. Cohen, 68, president of American Sponge & Chamois Co., New York, died in Elberton, Ga., Nov. 25. He had been living in Daytona Beach, Fla., for the past year and was visiting his daughter, Mrs. Florette Patz, at her home in Elberton, en route to New York, a few weeks ago when he was stricken with his fatal illness. He is survived by his wife, two other married daughters and a sister and brother.

The new "Glyco Mist" air sanitizer made by James Varley & Sons, St. Louis, contains triethylene and propylene glycols and a quaternary germicide.



Above: Charles E. Crowley, recently elected president of Alsop Engineering Corp., Milldale, Conn. He succeeds the late Samuel Alsop, Jr. and has been with the firm 27 years.

New Solid Shampoo

A hair shampoo in solid form was developed and announced recently by Glade, Woodside, L. I., N. Y. One and one-half ounces of solidified shampoo are put up in a small glass bottle. To use, water is added, the bottle shaken and the shampoo applied. When hair washing is completed the water remaining in the bottle is drained off.

Oscar G. Buettner Is Dead

Oscar G. Buettner, founder and head of Buettner Pest Control Co., Brooklyn, died Nov. 29, after having been in poor health for some time. He was the father of William O. Buettner, secretary of the National Pest Control Association. Mr. Buettner would have been 80 years old on Jan. 23. He founded his own company in 1911, after having been with John G. Norgal & Co., Brooklyn, one of the first pest control firms in the area. Mr. Buettner's wife died about three years ago. His survivors include, in addition to his son William, a daughter, Dorothy, and three sisters and one brother. Mr. Buettner was a Mason and was past master of Navigation Lodge, 232, F. & A.M., Brooklyn.

Dodges on World Cruise

Francis T. Dodge, chairman of the board of Dodge & Olcott, Inc., New York, and his wife sailed Jan. 12 on the S. S. *Caronia* for a two and one-half months world cruise which will include stops at ports on the four continents.

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by John W. McCutcheon

(36 pages)

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I. G. Waxes Now Available

The sale of I. G. waxes, widely used prior to the war, has been resumed by George H. Lincks, Inc., New York, it was announced recently. Production at this time has reached the point where carload quantities are available for manufacture of polishes and in allied industries requiring high melting point, specialized waxes.

Purdue PCO Conference

Two conferences of pest control operators will be held during February. The tenth annual Eastern Pest Control Operators' Conference will be held Feb. 2-4, at the University of Massachusetts at Amherst, Mass. The 14th annual Pest Control Operator's Conference at Purdue University, Lafayette, Ind., will be held the week of Feb. 6-10. Professor J. J. Davis head of the Entomology Department is in charge of the conference.

Bernard R. Armour Dies

Bernard R. Armour, 58, president and director of Heyden Chemical Corp. and American Aniline Products, Inc., both New York, died Dec. 1 in Roosevelt Hospital, New York. He was also a director of the New York Board of Trade and the American Association of Textile Colorists and Chemists, and a charter member of the Chemists Club. Mr. Armour, who made his home in Englewood, N. J., served as chairman of the board of American Potash & Chemical Corp. He is survived by his wife, three daughters, three sisters and a brother.

Klein Forms Own Firm

Samuel Klein, formerly in charge of the aromatics division of Van Dyk & Co., Belleville, N. J., recently announced the formation of a new firm to deal in perfumer's raw materials. He is located at 4 Hanover Square, New York. Before joining Van Dyk, Mr. Klein was perfumer for Synfleur Scientific Laboratories, New York, and has been associated with the perfuming materials industry since 1929. Mr. Klein is currently conducting a course on the subject of perfuming materials at New York University.

E. L. King, Sr., Dies at 72

E. L. King, Sr., retired president of J. R. Watkins Co., Winona, Minn., died at his home there of a stomach ailment at the age of 72. He was president of the firm from 1931 until his retirement in 1944. Mr. King was a native of Gallipolis, O., and joined the Watkins company in 1904, after his marriage to Grace Watkins, daughter of J. R. Watkins, founder of the company.

Legion Commander Rex Dir.

George N. Craig, recently elected National Commander of the American Legion, was a director of Rex-Cleanwall Corp., Brazil, Ind., manufacturers of floor wax, until the firm's directors held their annual meeting Dec. 5. At that time Mr. Craig resigned, since his new position will require all of his time, and Ted Raper, assistant publisher of the Brazil *Times*, was elected to fill the vacancy. Re-elected officers include Jim H. Longshore, president and treasurer, J. M. Longshore, vice-president, and Dave E. Smalley, secretary. In addition to serving as a member of the Rex-Cleanwall board, Mr. Craig had served as the company's general counsel.

CSA Nominators' Slate

The following list of candidates for officers and members of the board of the Salesmen's Association of the American Chemical Industry was announced recently by the organization's nominating committee: president, Charles V. Douglas, Heyden Chemical Corp.; vice-president, Paul W. Hiller, Innis, Speiden & Co.; treasurer, Edward A. Bush, Bush Aromatics, Inc.; secretary, Robert J. Milano, Millmaster Chemical Co.; for board of directors for three years, Warren F. Schmuacher, J. T. Baker Chemical Co.; Denman C. Peniston, Solvay Sales Division, Allied Chemical & Dye Corp.; director for two years, Ralph Ericsson, Sumner Chemical Co.

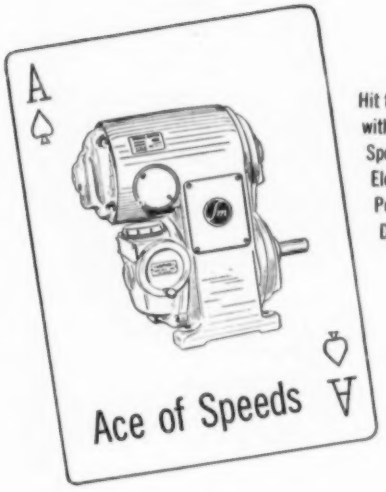
Compounds Renamed

The official designation by the Bureau of Entomology and Plant Quarantine, U. S. D. A., of common names for two of its insecticidal compounds was announced recently by Julius Hyman & Co., Denver. Compound 118 becomes aldrin, and dieldrin is the common name for Compound 497. Both were developed in the company's research laboratories and are being manufactured at the Hyman plant at the Rocky Mountain Arsenal, Denver. Aldrin is a volatile chemical and dieldrin is distinguished by its low vapor tension and consequent long residual property.

Fritzsche Sales Conference

The annual sales meeting of Fritzsche Brothers, Inc., New York, was held the week of Dec. 6-10, at the Hotel New Yorker, New York. Among those speaking to the representatives from all of the company's branch offices, executives, department heads and many of the New York personnel, was F. H. Leonhardt Fritzsche president, who opened the conference with an address of welcome. John H. Montgomery, vice-president and treasurer, John L. Cassullo, assistant treasurer and Daniel A. Neary, assistant secretary also spoke.

A group of Fritzsche representatives at sales conference.



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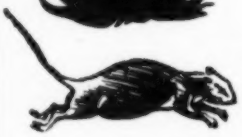

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Equipment at Chem. Exposition

DETERGENTS, insecticides, waxes, industrial chemicals, and control, production and laboratory equipment were included in the displays at the 22nd annual Exposition of Chemical Industries held at the Grand Central Palace, New York, Nov. 28 through Dec. 2. Prominent in the exhibits by Alrose Chemical Co., Providence, R. I.; Oronite Chemical Co., San Francisco; General Aniline & Film Corp., New York; Standard Scientific Co., New York; Carbide & Carbon Chemicals Corp., New York, and Victor Chemical Works, Chicago, Ill., were detergents. Besides surface active agents, Atlas Powder Co., Wilmington, Del., featured its high purity stearic acid. Synthetic chemicals, including beta-methyl umbelliferone were displayed at the booth of the Koppers Co., Pittsburgh, Pa.

Other products of interest to the detergent industry were: mineral filters by Johns-Manville Co., New York; solvent cleaners by Commercial Solvents Corp., New York; special chemicals by Winthrop-Stearns, Inc., New York; silica gel by Davison Chemical Corp., Baltimore, Md.; waxes by Bareco Oil Co., Philadelphia, Pa., and by American Resinous Chemicals Corp., New York; and emulsifiers, by the Emery Industries, Inc., Cincinnati, O.; Foster D. Snell, Inc., New York, suggested the various services of the consultant chemist.

American Wheelabrator & Equipment Corp., Mishawaka, Ind., featured pesticides; Hercules Powder Co., Wilmington, Del., exhibit included insecticides, waxes and emulsifiers; and the Dicalite Division of the Great Lakes Carbon Corp., New York, offered carriers for household insecticides.

Colloid mills were exhibited by Chemicolloid Labs., Inc., New York; Eppenbach, Inc., New York; and Premier Mill Corp., Geneva, N. Y. National Engineering Co., Chicago, Ill., displayed a laboratory-sized mulling machine; and Sharples Corp., Philadelphia, featured the centrifugal pumps which are widely employed in continuous soap manufacture. Nickel lined equipment was displayed by the Lukens Steel Co., Coatesville, Pa., and stainless steel tanks, etc. were displayed by the Metal Glass Products Co., Belding, Mich. Will Corp., Rochester, N. Y., and Alsop Engineering Corp., Milldale, Conn., included filters in their exhibit.

Automatic packaging equipment was widely shown in the exposition. A variety of bottle, package and bag filling equipment was illustrated and working models were on display. Among the exhibitors featuring this type of equipment were George Rodgers Co., New York; MRM Co., Brooklyn, N. Y.; St. Regis Sales Corp., Oswego, N. Y.; Karl Kiefer Machine Co., Cincinnati; Pneumatic Scale Corp., Ltd., Quincy, Mass.; Jeffrey Manufacturing Co., Columbus, O., and Horix Manufacturing Co., Pittsburgh, Pa. Plate type filter presses were displayed by the Republic Seitz Filter Corp., Newark, N. J. Continental Can Co., New York, distributed literature on its various types of containers.

Govt. in Advertising Rules

Advertising which refers to the Government, its agencies, personnel, etc., should be cleared with the appropriate department in advance of publication or issuance, according to a recent report of the National Better Business Bureau. The report, which bears the title "Reference to Federal Agencies in Advertising", is a supplement to the Bureau's earlier work, "Do's and Don'ts in Advertising". The report points out that without exception the Federal Departments and agencies surveyed do not authorize advertising representations that they approve or recommend a particular product over any other, and that as a general rule, any claim of governmental approval is objectionable, as is the use of government tests of products. Under certain circumstances it is permissable for an advertiser to claim that a product complies with specific government standards, or is federally inspected, certified, licensed, etc. Such claims must be based upon facts and should not be made, even though factual, if they contain misleading implications and, particularly, if they imply government endorsement. A truthful statement that the government agency uses an advertised product may be permissible, but under certain circumstances, even factual statements of use may be deemed objectionable for security or other reasons, the booklet points out.

NWDA Appoints Magnus

Robert B. Magnus of Magnus, Mabee & Reynard, Inc., New York, was recently appointed chairman of the rates and routes committee of the manufacturers' division of the National Wholesale Druggists Association.

Boyle in Hyman Post

The appointment of Gerald T. Boyle as traffic director of Julius Hyman & Co., Denver, was announced recently. He was formerly traffic manager of the Chicago office of Witco Chemical Co., New York, for 10 years. He will make his headquarters in the Hyman Denver offices.

Plan More NSSA Films

Plans for the production of training films on the cleaning and maintenance of wash rooms and the cleaning and maintenance of hard floors are now under consideration by the National Sanitary Supply Association, it was announced recently. The association's film, "The Cleaning and Maintenance of Soft Floors", which was completed recently, had its initial showing in the East at the Hotel Astor, New York, Dec. 10. Approximately 60 persons were present for the showing, including a number of sanitary supply distributors and Leo J. Kelly, executive vice-president of the N.S.S.A. Jacob Kahn of Windsor Wax Co., Hoboken, N. J., regional vice-president of the association, was chairman in charge of arrangements for the showing.

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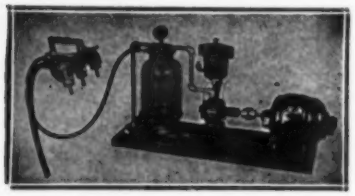

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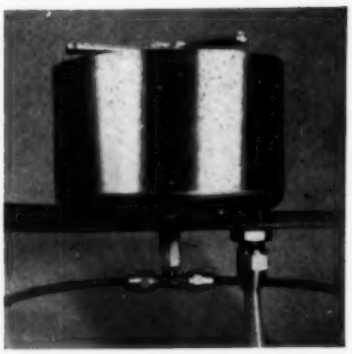

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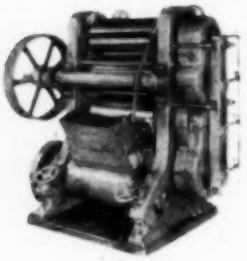

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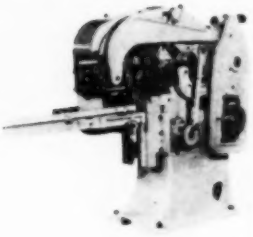

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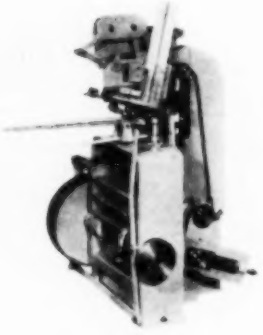

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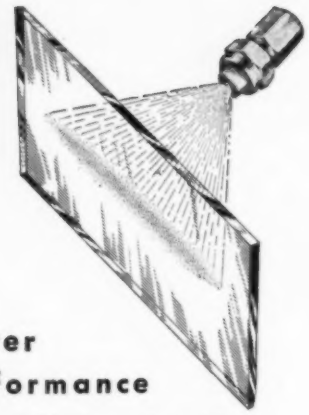

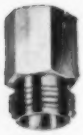
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Wax Spec. 784 Hearing Report

CHANGES in a proposed revision of Bureau of Federal Supply Specification 784, covering Water Emulsion Floor Wax, were made at a hearing in Washington, D. C., Dec. 8, in which manufacturers and government officials participated. The Bureau agreed to the elimination of references to siliceous ash and benzene content in the specification, and also will consider the possibility of "brand approval." It was suggested that the government set a price on tests it would conduct on products to be submitted for approval. Spot tests of approved products on each delivery for compliance were also recommended. At the meeting, the following changes were made or suggested in the proposed revision to Specification 784:

On the first page, under the Floor, Wax, Water Emulsion, delete Slip Retardant.

In 1.1—change from grade to scope. This paragraph now reads: "*Scope.*—Water Emulsion floor wax covered by this specification shall be lustrous drying, having slip retardant properties."

On page 2—3.2, 3.3, 3.4, 3.5.1, 3.5.2, are all deleted. In lieu of these, there will be an additional test which is being worked out by Joseph Green of Oil Specialties & Refining Co., Brooklyn, and William Walton of the Bureau of Standards. Essentially, the test is to substantiate the fact that a polish has wax in it. If the product does contain wax, it is self healing. To determine if the product is self healing, it was decided that there should be an attempt made to establish the degree of polishability of the film. To do this it is necessary to develop a method for dulling the film, the technical details of which will have to be worked out. Essentially, the method consists of laying a piece of specified sandpaper on the wax film. On top of the paper are placed a metal plate, plus a weight, all of which is drawn across the wax plate at a definite speed. Repeat at a 90° angle. Then take a soft cloth and attempt to polish out the scratches. If the scratches come out, the product is buffable. It is then a wax and meets the wax content requirement.

The next change is in 3.9, which now reads.—"Odor. The water emulsion floor wax shall not have an offensive odor, nor shall it develop an offensive odor in storage in the original unopened containers."

The next change is in the title of 3.11. It is now "specular." It was suggested that instead of using apparatus for this, the Government Printing Office produce a standard dull surface similar to test papers now in existence. The surface would be overprinted with varnish having a minimum gloss of 85, as is outlined in the test. In this manner, if a wax is applied on any black panel, a visual observation may be made, which eliminates the need for a gloss meter. While such a method is satisfactory for purchase requirements to determine material having the minimum gloss, it is not suggested that the gloss meter be dropped entirely for measurements, as it is a very useful piece of laboratory apparatus.

In 3.12, the statement "and shall be" is changed to read "Shall have a smooth finish, clear, etc." It is likewise intended that 3.11 and 3.12 be run jointly on the black glass panel. However, heating characteristics including discoloration properties will be covered similar to those in previous specifications, such as PW-151a and Fed. Bur. of Supply Spec. 784—When a sample of the water emulsion wax is flown over the surface of a vitreous enamel, only a negligible amount of darkening of the panel shall be permitted. This is done by the following method: Flow a portion of the water emulsion wax over the surface of a vitreous ivory enamel panel in such a manner as to leave sections of the surface of the panel free of wax. (This is for comparative purposes.) Allow to dry in a nearly vertical position at a temperature of 20 to 25° C for 24 hours. Compare the coated section of the panel (ignore edges of the film on the panel), with the uncoated parts. Examine the panel for darkening caused by the water emulsion wax. Panels of this nature can be obtained from the National Bureau of Standards under the commercial standard CS 63-38 #SBC-31 in close ivory.

The next change is merely one of method. Namely, in 3.16, the wax is flowed on the panel and allowed to drain in a vertical position. The panel is then reversed and a second coat is flowed from bottom to top of panel.

Under 3.20, Tackiness, there was considerable discussion in regard to an additional method to be used in place of the one specified. The method provides that a panel 12 inches square be waxed with an application. The panel is then allowed to dry for 30 minutes. A tooled steel disc, one inch in diameter and weighing 2.00 grams, is then placed on the panel for 30 minutes, at the end of which time a 500 gram weight is placed on the panel for 60 seconds. The weight is removed and the panel raised through an arc. The angle at which the disc slides from the panel is calculated, and should not be less than 45°. A #500 emery cloth is used to polish the disc each time before it is used. While the above method has not as yet been accepted, it was discussed, and there is a possibility that it will be included in the revised specification.

In 3.21, slip resistance measurement by the Sigler method was eliminated. The reason for its elimination is its lack of reproducibility of results. However, it was suggested that it is possible to have a standard sample of wax, which the government could use in establishing minimum slip. If this standard were adopted and it was thought feasible and practical to use, the government might put the 3.21 specification back, using the standard wax sample as the minimum slip requirement with the Siegler machine. Because it is doubtful that this could be done now, the Bureau reserved the right to keep 3.21, using the standard sample, or to restore it to the specification when the details for the machine have been worked out.

Because of the foregoing, 4.2.2 on page five is eliminated, as are the tests on pages 6, 7 and 9, down to the last requirement, 4.2.6, which remains.

On page 13, the change in operation in 4.2.11 has already been reported and this particular requirement is removed and an alternate has been included.

The method of running the freeze test (page 14) is to maintain the bottle at —10°C+2°C. This eliminates the use of an electric refrigerator. Any method may be used, and the words "and if frozen solid" are removed, as well as the words in the brackets. "If not frozen solid, return to refrigerator until it is frozen" have likewise been eliminated. It was agreed that the heat test would be run in this particular manner.

In the preparation of panels in the leveling and spreading in the following panels, it was decided to increase the length of the stroke to five inches.

The remainder of the specification stands, with one possible exception covering the use of the method of tack in 4.2.19. Likewise, the test under 4.2.20 was eliminated completely. However, the Underwriters' Laboratory label will be required on all tests.

Tolerance Hearings Jan. 17

Public hearings on proposals to establish tolerances of insecticidal and fungicidal residues on foods will begin Tuesday, Jan. 17, in room 5140, Federal Security Building, Washington.

Barger Varley Coast Rep.

The appointment of H. B. Barger as its west coast representative with headquarters in Portland, Ore., was announced recently by James Varley & Sons, St. Louis. Mr. Barger, who has been connected with the sanitary supply business for the past three years, is covering the states of California, Oregon and Washington, as exclusive representative for Varley.

Hercules Buys Ore. Tract

The construction of a pilot plant in Klamath Falls, Ore., for the study of western woods was announced recently by Hercules Powder Co., Wilmington. A study of "the western woods (which) contain a number of interesting organic chemicals" is planned for the new 50 acre property, according to A. E. Forster, Hercules director.

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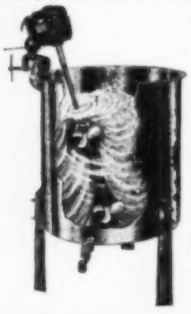

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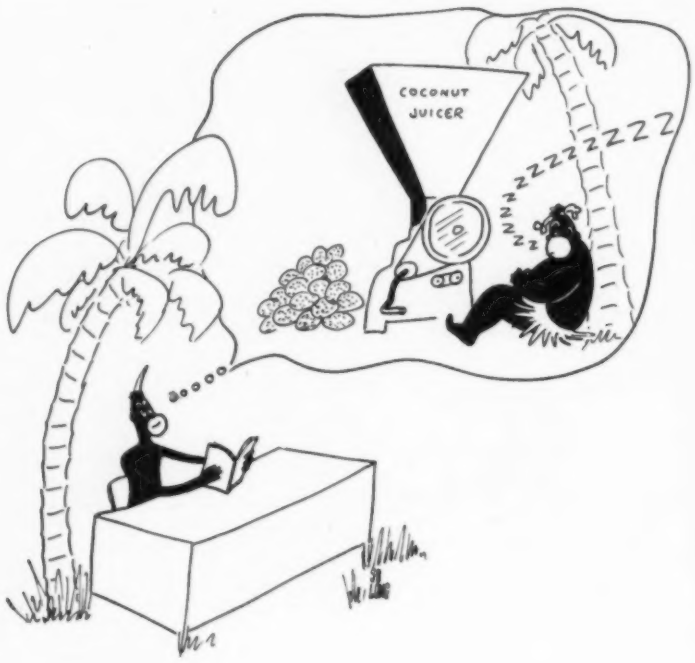
Every effort is made to keep this index free of errors, but no responsibility is assumed for any omissions.



Business minded...

WHEN a business man reads his industry magazine, he is not usually in quest of entertainment or light reading. He is after facts, —facts of aid and interest to his business. He is very definitely **"business minded"** as it were.

And that is why advertising in industry magazines,—or business papers, if you prefer the term,—gets to him when he is in the correct frame of mind, and why it can be and is more effective for advertising industrial products.

If you would catch the key men in the field of soap and detergent products, insecticides, disinfectants, floor products and allied chemical specialties when they are "business minded," try advertising in

SOAP *and Sanitary Chemicals*

254 WEST 31st STREET NEW YORK 1

TALE ENDS

TAKE to the storm cellars, men! Federal Trade Commish, it would seem, is really going on the war path. Within a month, they have lit real heavy on the advertising and other claims of (1) a nationally known tooth paste, (2) an athlete's foot prep, (3) a cleanser, (4) a shampoo, (5) a nail polish. It looks like all Hell can break loose any day now!

• • •

Is the well-known "Vel" leading a double life? On some packages, West Coast, it says that "Vel" is an akyl aryl sulfate, and on others that it is a sulfated monoglyceride. That's what one of our nosey friends found out who reads the small type on packages.

• • •

A New York newspaper columnist tells us that Charles Luckman of Lever now occupies Suite 35-F in the Waldorf-Astoria Towers, N. Y., having vacated his house at Wellesley Hills, Mass. Also, we note that C.L. heads the finance committee of the Democrats' annual Jefferson-Jackson Day dinner which tabs the eaters 100 iron-men per copy. Being a Republican ain't much these days, but it can have its financial advantages at times.

• • •

Percy Magnus, turkey farmer of Oswegatchie, Conn. — in case you can't pronounce it, it's near New London — treated the trade press to a dinner last month at which some of his choicest birds were served. They batted 1000 on flavor. In between turkeys, Percy is the well-known prez of Magnus, Mabee & Reynard, now and then referred to by the boys of the press as Magnus, Magnus & Magnus, —and no Mabee!

• • •

Errata . . . Reports that Jack Varley, St. Louis *bon vivant* and disinfectant mfr. had bought into a well-known St. Louis bistro have been denied *unequivocally* by said J. Varley. The rumor, he states, grew out of a routine complaint while quaffing a scotch-and-soda when he said: "Now, if I owned this dump, I'd . . . " And that's how it all started.

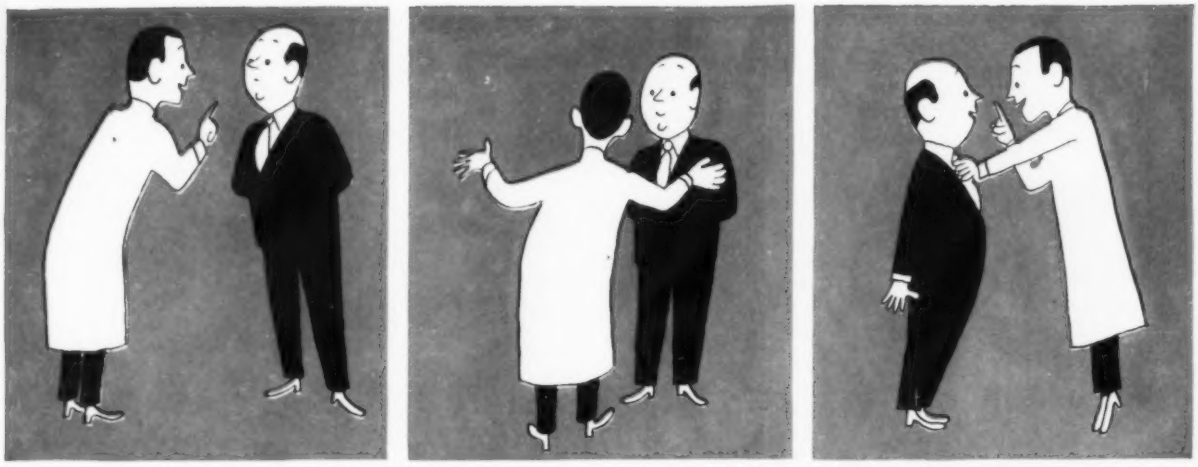
• • •

About 1,000 members of the Chemical Salesmen's Assn. were whooping it up at their annual Xmas sprawl last month in N.Y. Way, way back at a corner table about a mile from the stage sat (1) Al Loeffler of Monsanto, prez of the Assn., and (2) Hans Wesemann. Fritzsche's silent strong man and prez of the Essential Oil Assn. Apparently no RHIP among the Chemical Salesmen,—RHIP being Army lingo for "rank has its privileges."

• • •

Fifty members of NAIDM (now Chemical Specialties Mfrs. Assn.) following its meeting in Washington last month spent a day at the Beltsville, Md., plant of the USDA to observe the work going on there. Praise for Beltsville operations was unanimous as was the opinion of a day well spent. Is Beltsville hiding its light under a bushel?

When your chemist talks good scents...



He's talking about NORDA

Every time your chemist makes your products *smell* better, he makes them *sell* better. Good chemists count on Norda.

Norda Oil Fir Needle Siberian Imitation is a life-saver for cosmetic, perfume, and soap chemists today, with the shortage of genuine oil. *Norda Oil Fir Needle Siberian Imitation* has all the real balsamic fir needle odor of freshly-dispelled natural oil—all the same long-lasting fragrance, all the same smooth strength. It keeps remarkably well, and holds the true Siberian oil fir needle note without deteriorating.

Send to Norda, *first to talk good sales scents*, for free samples of *Norda Oil Fir Needle Siberian Imitation*. Have your chemist try it. Come to Norda with all your problems and plans. Ask Norda to help you *now*.

Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC.
601 West 26th Street, New York 1, N. Y.

NORDA MAKES GOOD SCENTS

O • LOS ANGELES • ST. PAUL • MONTREAL • TORONTO • HAVANA • MEXICO CITY • LONDON • PARIS

Glyco-Mist

FREE!

SANITIZER FOR HOTELS, HOSPITALS, INSTITUTIONS, TOURIST

Available in 55, 30, 15 & 5 Gal. Drums or in Packages. Private Brand Also

Here's What Glyco-Mist Will Do:

Glyco-Mist reduces numbers of air-borne bacteria!
Glyco-Mist sanitizes the air!
Glyco-Mist actually disinfects surfaces contacted!
Glyco-Mist deodorizes both air and organic sources of odor!

(Can the above be done with any other commercial disinfectant, such as Pine, Coal Tar or Cresol Compounds? NO!)

You can spray GLYCO-MIST into the air and it will kill airborne bacteria, kill foul organic odors and deodorize in the most pleasant manner ever imagined! GLYCO-MIST can be sprayed on surfaces and will positively disinfect the areas treated!

GLYCO-MIST can be wiped over objects suspected of harboring disease-producing bacteria to protect public health. Perfect for sanitizing telephones, sick room equipment, wash room equipment or any objects handled by numbers of persons.

GLYCO-MIST is a tested and proven combination of triethylene glycol, propylene glycol and quaternary amm germicide in an alcohol-aqueous base. Where else in the is there a product that, when sprayed in the air, kills b —when sprayed on surfaces kills bacteria—when spra sources of foul odors destroys them instantly, and to to off, is the most fragrant, pleasantly scented deodorant-sa ever offered the public!

GLYCO-MIST destroys mildew and mold odors and eve fungus growth causing same! Spray fragrant GLYCO- on shoes, golf bags, leather goods, clothing, draperies, even inside rental shoes for use as a prophylactic agains lete's Foot disease and to destroy odor.

CAUTION!!! Do not be fooled by low priced inferior sub being offered in competition. GLYCO-MIST AND ONLY GLYC GIVES YOU THE FOLLOWING PROTECTION!

Every single gallon chemically tested!
Every single gallon bacteriologically examined!
Every package, large or small, marked with a lot number!
Absolute uniformity and quality at all times!
The odor with the most sales appeal on the market!
Beautifully packaged, and shipped in bottles and specially drums!

THERE IS NO SUBSTITUTE FOR QUALITY.

James Varley & Sons

1200 SWITZER AVE. ST. LOUIS 15,

Mail This Coupon For FREE TRIAL OFFER!

JAMES VARLEY & SONS, INC.
1200 Switzer Ave., St. Louis 15, Mo.

Please send me a trial 8 ounce bottle of Glyco-Mist with a plastic sprayer. I want to use it around the house and prov myself it will do everything you claim.

NAME.....
FIRM.....
STREET.....
CITY.....**STATE**.....